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RUBBER AND RESIN CONTENT

OF

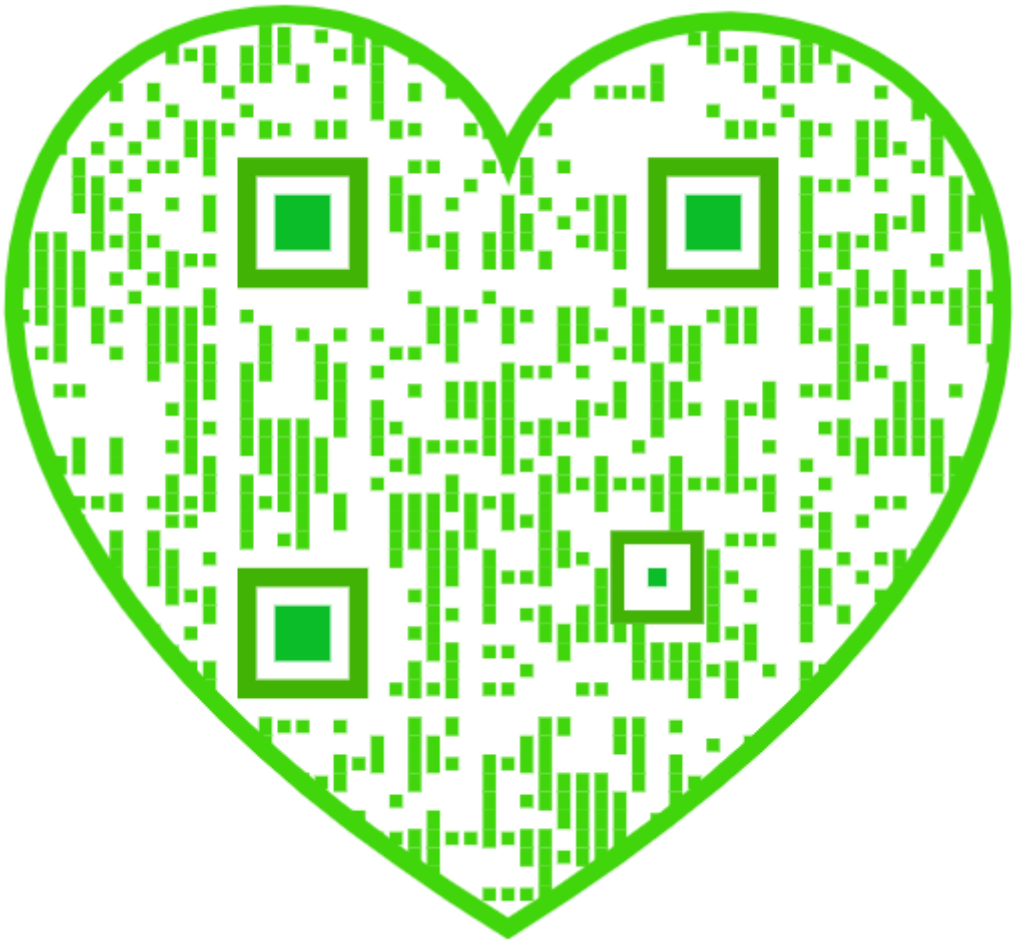
NATIVE AND INTRODUCED PLANTS OF CANADA

William Harold Minshall

Botany and Plant Pathology Division

Canada Department of Agriculture

Ottawa, Ontario.



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INTRODUCTION

In 1942 and 1943 the Botany and Plant Pathology Division, Canada Department of Agriculture, undertook a general survey of native and introduced plants thought to be capable of yielding natural rubber. Wide publicity was responsible for an excellent response to the request for plant material and in 1942 over 1400 samples were collected from all parts of Canada. Species of certain generic groups including Apocynum, Asclepias, and Solidago, established in plots at Ottawa, provided an additional 400 samples in 1943. The present publication presents the results of analyses of rubber and resin contents of this plant material.

MATERIALS AND METHODS

On receipt of the plant material it was, where possible, divided into roots, stems, and leaves and if not already in a dry condition it was dried at 65°C in a forced draft oven. To ensure proper identification a specimen prepared from each collection was deposited in the herbarium of the Botany and Plant Pathology Division at Ottawa. The dried samples were ground in a laboratory hammer mill and stored in cardboard containers for analysis.

The extraction method of Hall and Goodspeed (2) has frequently been used for the determination of the rubber content of plants. This method involves extraction in two steps: first, with acetone to remove resins, fats, coloring matters etc.; then with benzene to remove the rubber. As a considerable number of materials are soluble in benzene as well as acetone, the reliability of this extraction method depends on the completeness with which the nonrubber benzene-soluble constituents are removed in the first extraction. Hall and Goodspeed (2) used extraction periods of three hours but other workers (1,3,4,5) have used periods of from six to sixteen hours. Longer extraction periods increase the accuracy of the determination but

short periods are advantageous in the handling of large numbers of samples. After preliminary investigations a compromise between short and long extraction periods was adopted in the present study. All samples were first extracted with acetone for six hours followed by benzene for three hours. Those samples from genera of interest which yielded a benzene extract in excess of 0.5% of dry weight from this preliminary test were analyzed again with extraction periods of 20 hours. The analytical procedures were as follows:

In the preliminary analysis two grams of the ground material in a folded filter paper was placed in a Whatman paper thimble and extracted on a Goldfisch apparatus with acetone for six hours. After air drying for at least 24 hours the material was extracted with benzene for three hours. Acetone extracts were dried at 100°C for three hours and benzene extracts were dried at 100°C for two hours. Moisture determinations were made by drying separate one-gram samples of the plant material in a vacuum oven at 100°C for five hours. The acetone and benzene extracts were then calculated on a percentage dry weight basis.

In the second long-period analyses the determinations were made in duplicate. Approximately two grams of the ground material was placed in a moisture dish, dried for 16 hours at 70°C in a vacuum oven to remove the residual moisture, weighed, transferred to a folded filter paper, placed in a paper thimble and extracted on the Goldfisch apparatus with acetone for 20 hours. After being dried in air the sample was extracted with benzene for 20 hours. Extract drying times were the same as used in the preliminary analysis.

RESULTS

Acetone and benzene extracts from the preliminary short-time analyses together with the collection locality, date of collection, and name of

collector are given in Table 1. The plant species are listed alphabetically. If more than one collection was made for a species these collections are arranged (a) geographically by provinces from west to east and (b) within each province by date of collection from early season to late. Periodic collections of Apocynum and Asclepias, which were made in the same localities, are grouped together in the table and the collection localities are deleted for all but the first sample. Accession numbers are included with the locality for the material that was established in plots at Ottawa.

The great majority of plants analyzed had benzene extracts of less than one percent, indicating that they contained little or no rubber. Among the species with more than two percent were Apocynum androsaemifolium 2.1%, Asclepias syriaca 2.5%, A. sullivantii 2.1%, Euonymus europaea 3.2%, E. maackii 6.1%, and E. yedoensis 2.7%. In addition species of the following genera had benzene extracts between one and two percent: Apocynum, Asclepias, Eucommia, Euonymus, Euphorbia, Lonicera, Parthenium, Solidago, and Tanacetum.

Rubber apparently is not stored uniformly in the roots and shoots of all plants. In species of Apocynum, Asclepias, Lonicera, and Solidago the leaves had higher benzene extracts than did the stems or roots. In species of Euonymus, however, the highest benzene extract was in the bark, while in Euphorbia corollata it was in the roots, and in Parthenium argentatum it was in the stems.

Analyses of the periodic collections from the same locality of Apocynum androsaemifolium and Asclepias syriaca indicate that the rubber content of the leaves increased with the advancing season.

Large acetone extracts were obtained from some of the samples, for example Lonicera tatarica 47%, Rhus typhina 45%, R. glabra 35%, Lonicera ruprechtiana 39%, L. amoena 35%, Euonymus japonica 34%, Apocynum androsaemifolium 33%, and Betula papyrifera 30%. In addition species of the genera Acer, Arctosta-

phylos, Asclepias, Baptisia, Campanula, Chrysothamnus, Comptonia, Cotinus, Daucus, Eupatorium, Euphorbia, Grindelia, Solidago, and Tragopogon yielded acetone extracts between 20 and 30%.

Table 2 gives a comparison of the acetone and benzene extracts from the short and long extraction procedures. There is little difference between the benzene extract from these two extraction periods with species of Apocynum, Asclepias, Campanula, Chrysothamnus, Euonymus, Lonicera, and Solidago but plants of the genus Lactuca yielded a much higher benzene extract (1.9-2.9%) from the 20-hour extraction period than from the 3-hour period (0.6-0.8%). Lactuca rubber apparently dissolves slowly into benzene. In the acetone extraction procedure the majority of plants yielded a slightly higher extract from the 20-hour period than from the 6-hour period of the preliminary analysis.

ACKNOWLEDGMENTS

It is a pleasure to acknowledge the assistance of the many people participating in this project. The collection campaign was organized by Dr. H. A. Senn and the success of the program is evident from the many collections received from all parts of Canada. Sincere thanks are extended to the numerous collaborators who collected and forwarded plant material. Technical assistance was given by A. Coghlan, L. Hogan, E.M. Lewis, K. Lochheed, D. McIntosh, H. Mitchell, and Dr. A. Skolko. Grinding and extraction of the plant material was carried out in the Chemistry Division, Canada Department of Agriculture.

SUMMARY

Some 1800 samples representing over 300 species of the native and introduced plants collected at numerous stations throughout Canada were analyzed by the extraction method for resin and rubber content. No hitherto unknown

species of outstanding value as a rubber plant was discovered in this survey. Genera containing species with a benzene extract (rubber content) in excess of one percent of dry weight were: Apocynum, Asclepias, Eucomia, Euonymus, Euphorbia, Lonicera, Parthenium, and Solidago. In comparison of 3-hour and 20-hour extraction periods with benzene there was little difference in the amount of the extract obtained from plants of Apocynum, Asclepias, Chrysothamnus, Euonymus, Lonicera, or Solidago; but plants of the genus Lactuca yielded much higher extracts (1.9-2.9%) from the 20-hour period than from the 3-hour period (0.6-0.8%).

Genera containing species with an acetone extract (resin content) in excess of 20% of dry weight included the following: Acer, Apocynum, Arctostaphylos, Asclepias, Baptisia, Betula, Campanula, Chrysothamnus, Comptonia, Cotinus, Daucus, Euonymus, Eupatorium, Euphorbia, Grindelia, Lonicera, Rhus, Solidago, and Tragopogon.

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Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract % dry w
Abutilon theophrasti Medic.	Marysville, Ont.	23/8/42	E.G. Anderson	663	whole	5.6	0.33
				661	leaves	8.5	0.26
				662	stems	6.1	0.08
Acer platanoides L.	Ottawa, Ont.	7/7/42	H.A. Senn, D.C. McIntosh	163	leaves	22.6	0.24
				164	stems	8.6	0.11
Acerates viridiflora (Raf.) Eaton var. lanceolata (Ives) Gray	Brant Co., Ont.	1/7/42	W.H. Minshall	154	shoots	14.2	0.59
				155	roots	10.7	0.15
	Rondeau Park, Ont.	8/8/42	C.C. Bell	631	whole	8.2	0.85
Achillea millefolium L.	Eastend, Sask.	?/8/42	H.S. Jones	649	whole	9.0	0.28
	Ottawa, Ont.	29/6/42	D.C. McIntosh	91	whole	7.3	0.21
Adenophora polymorpha Ledeb.	Ottawa, Ont.	29/6/42	D.C. McIntosh	100	shoots	7.2	0.50
Agoseris glauca (Pursh) Rat.	Morden, Man.	25/6/42	H.H. Marshall	738	whole	7.5	0.13
	Killarney-Ninga, Man.	14/7/42	B. Peterson, W. Hagborg	304	whole	6.9	0.29
Agoseris glauca (Pursh) Rat. var. ecorzoneraefolia (Schrad.) Greene	Craigmyle District, Alta.	30/6/42	A.H. Brinkman	195	whole	11.4	0.47
	Fort Saskatchewan, Alta.	7/7/42	G.H. Turner	257	whole	10.9	0.40
	Pearce, Alta.	10/7/42	J.J. Sexsmith	380	whole	11.3	0.53
	Vonda, Sask.	24/6/42	R.C. Russell, E.J. Ledingham	294	whole	11.7	0.35
	Regina, Sask.	4/7/42	L.T. Carmichael	276	whole	9.6	0.69
	Saskatoon, Sask.	13/7/42	R.C. Russell	536	whole	10.2	0.35
	Birtle, Man.	7/7/42	M.G. Dudley	401	whole	12.9	0.38
Agoseris parviflora (Nutt.) Greene	Saskatoon, Sask.	27/7/42	R.C. Russell	526	whole	10.1	0.49
Agoseris turbinata Rydb.	Craigmyle Dist., Alta.	30/6/42	A.H. Brinkman	194	whole	10.5	0.56
Agropyron repens (L.) Beauv.	Fort Frances, Ont.	?/8/42	A. Cramg	709	roots	4.0	0.14
Ambrosia elatior L.	Ottawa, Ont.	20/8/42	H. Groh	603	whole	10.1	0.35
Ambrosia trifida L.	Ottawa, Ont.	26/6/42	H. Groh	71	shoots	8.1	0.44
				76	roots	4.1	0.29
Anaphalis margaritacea (L.) Gray var. intercedens Hara	Abbotsford, B.C.	4/8/42	Dom. Ent. Lab.	574	whole	7.6	0.17
	Ottawa, Ont.	25/6/42	H. Groh	63	whole	10.2	0.39
Anethum graveolens L.	Ottawa, Ont.	?/11/42	M.N. Zinck	1060	whole	8.0	0.17
Anthemis cotula L.	Carleton Co., Ont.	10/6/42	H.A. Senn, M.N. Zinck, D.C. McIntosh	211	whole	11.7	0.39
Anthemis tinctoria L.	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	114	shoots	7.7	0.33
Apocynum androsaemifolium L.	Westbank, B.C.	28/6/42	G. Stevenson	233	whole	16.6	0.45
	Salmon Arm, B.C.	27/7/42	C.L. Armitage	487	whole	17.4	0.61
	Agassiz, B.C.	4/8/42	Ent. Lab.	579	whole	15.9	0.39
	Summerland, B.C.	3/8/42	G.E. Woolliams	596	leaves	17.1	0.50
		31/8/42	G.E. Woolliams	828	whole	13.4	0.61
	Salmon Arm, B.C.	9/9/42	C.L. Armitage	822	whole	18.9	1.18
		24/9/42	C.L. Armitage	916	whole	13.3	0.89

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Apocynum androsaemifolium L. - Continued		24/9/42	C.L. Armitage	918	leaves	21.5	2.09
				919	stems & pods	7.9	0.13
				917	roots	7.6	0.11
	Ft. Saskatchewan, Alta.	1/7/42	G.H. Turner	225	whole	11.7	0.33
	Saskatoon, Sask.	8/7/42	R.C. Russell	529	leaves	15.4	0.20
	S. Saskatoon, Sask.	13/7/42	R.C. Russell	534	shoots	11.4	0.22
	Edmonton, Alta.	13/7/42	E.H. Moss	314	shoots	16.4	0.50
	Saskatoon, Sask.	25/7/42	R.C. Russell	528	whole	15.7	0.49
	S. Saskatoon, Sask.	25/7/42	R.C. Russell	531	shoots	14.6	0.27
	Saskatoon, Sask.	7/8/42	R.C. Russell	684	whole	12.6	0.27
	Saskatoon, Sask.	7/8/42	R.C. Russell	680	whole	16.8	0.39
	Saskatoon, Sask.	25/8/42	R.C. Russell	869	whole	12.7	0.39
	Saskatoon, Sask.	25/8/42	R.C. Russell	871	whole	12.2	0.37
	Morden, Man.	21/6/42	H.H. Marshall	734	whole	15.1	0.26
	Birtle, Man.	7/7/42	M.G. Dudley	404	whole	11.4	0.40
	Muskoka, Ont.	28/6/42	W.H. Minshall	108	shoots	16.6	0.29
	Beamsville, Ont.	4/7/42	F. Ranson	586	whole	18.8	0.34
	Ipperwash Camp, Ont.	14/8/42	H. Millar	606	shoots	16.7	0.57
	Brant Co., Ont.	28/6/42	R.F. Cain	900	leaves	28.8	0.69
		12/7/42	R.F. Cain	909	leaves	33.3	0.94
				908	stems	10.8	0.25
		26/8/42	R.F. Cain	1483	leaves	32.3	1.61
				1484	stems	12.7	0.21
		10/9/42	R.F. Cain	1488	leaves	30.3	1.67
				1489	stems	10.2	0.28
	Brant Co., Ont.	20/9/42	R.F. Cain	1493	leaves	28.1	0.52
				1494	stems	8.9	0.24
				1495	roots	9.5	0.16
		20/9/42	R.F. Cain	1496	leaves	24.1	0.86
				1497	stems	8.9	0.20
				1498	pods	0.9	0.91
	Ottawa, Ont.	3/6/42	H. Groh	1	leaves	11.3	0.06
				1A	stems	9.8	0.30
		11/6/42	H. Groh	19	leaves	17.8	0.20
				19A	stems	7.7	0.20
				21	roots	7.0	0.10
		25/6/42	H. Groh, E.G. Anderson	64	leaves	20.3	0.40
				64A	stems	12.9	0.15
		15/7/42	H. Groh, E.G. Anderson	265	leaves	17.6	0.80
				265A	stems	10.9	0.30

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
				266	roots	6.2	0.20
		27/7/42	H. Groh	397	stems	12.3	0.20
				396	leaves	21.3	0.80
		11/8/42	H. Groh	550	shoots	23.5	0.90
				552	leaves	24.6	1.20
				551	stems	10.0	0.40
		26/8/42	H. Groh	664	leaves	24.7	0.80
				665	stems	14.4	0.30
		11/9/42	H. Groh	802	whole	23.2	1.10
		11/9/42	H. Groh	800	leaves	23.7	1.10
		25/9/42	H. Groh	894	leaves	24.3	1.08
				893	stems	6.2	0.21
	Ottawa, Ont.(42-414-32)	27/8/43	M.N. Zinck	1821	leaves	16.6	0.82
	Ottawa, Ont.(42-414-11)	4/9/43	M.N. Zinck	1832	leaves	28.0	0.41
	Ottawa, Ont.(43-479-1)	8/9/43	M.N. Zinck	1843	leaves	24.5	0.46
	Ottawa, Ont.(43-489-1)	8/9/43	M.N. Zinck	1840	leaves	19.0	0.58
	Ottawa, Ont.(42-414-11)	30/9/42	M.N. Zinck	935	leaves	17.4	0.49
				934	stems	8.8	0.14
	Brebeuf, Que.	3/8/42	L. Coupal	462	whole	15.1	0.50
	Everett, N.B.	27/6/42	M.E. Moore, S.F. Clarkson, J.L. Howatt	864	whole	5.9	0.21
	Fredericton, N.B.	21/7/42	J.L. Howatt, S.F. Clarkson	858	whole	11.6	0.18
	Waterville, N.S.	26/7/42	E. Buchanan	456	whole	15.9	0.40
	Highbury, N.S.	16/6/42	R.M. Lewis	82	roots	9.0	0.05
	Kentville, N.S.	17/6/42	R.M. Lewis	79	leaves	12.7	0.30
				79A	stems	7.1	0.20
	Highbury, N.S.	3/7/42	R.M. Lewis	239	leaves	15.9	0.30
				239A	stems	7.3	0.30
	Kentville, N.S.	3/7/42	R.M. Lewis	240	leaves	17.0	0.40
				240A	stems	7.7	0.40
	Highbury, N.S.	17/7/42	R.M. Lewis	622	leaves	18.9	0.30
	Kentville, N.S.	17/7/42	R.M. Lewis	615	leaves	17.6	0.30
	Highbury, N.S.	31/7/42	R.M. Lewis	617	leaves	14.3	0.20
	Kentville, N.S.	31/7/42	R.M. Lewis	619	leaves	18.9	0.20
		14/8/42	R.M. Lewis	694	leaves	27.5	0.20
	Highbury, N.S.	14/8/42	R.M. Lewis	693	leaves	19.1	0.30
		28/8/42	R.M. Lewis	813	leaves	20.1	0.40
	Kentville, N.S.	28/8/42	R.M. Lewis	812	leaves	24.0	0.40
	Highbury, N.S.	11/9/42	R.M. Lewis	1329	whole	10.0	0.23
	Kentville, N.S.	11/9/42	R.M. Lewis	1327	whole	14.7	0.21

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Apocynum androsaemifolium L. - Continued	Highbury, N.S.	25/9/42	R.M. Lewis	1338	whole	11.8	0.19
	Kentville, N.S.	25/9/42	R.M. Lewis	1337	whole	14.9	0.21
	Highbury, N.S.	9/10/42	R.M. Lewis	1336	whole	14.9	0.24
	Kentville, N.S.	9/10/42	R.M. Lewis	1331	whole	15.8	0.28
	Highbury, N.S.	23/10/42	R.M. Lewis	1349	whole	7.9	0.21
Apocynum androsaemifolium L. var. glabrum Macoun	Pemberton, B.C.	20/6/42	J. Ronayne	457	whole	19.1	0.27
	Ottawa, Ont.(42-41-54)	30/9/42	M.N. Zinck	937	leaves	15.4	0.33
				936	stems	9.8	0.10
	Ottawa, Ont.(42-41-54)	27/8/43	M.N. Zinck	1813	leaves	28.9	0.38
Apocynum cannabinum L.	Hamilton, Ont.	30/8/43	C.M. Haist	1825	leaves	19.3	0.67
	Preston, Ont.	2/9/42	H. Groh	775	whole	12.2	1.13
	Ottawa, Ont.(43-5-4)	8/9/43	M.N. Zinck	1838	leaves	19.0	0.19
	Crediton, Ont.	?/9/42	L.O. Gaisser	796	whole	15.8	0.59
Apocynum cannabinum L. var. glaberrimum A. DC.	Rondeau Prov. Park, Ont	13/7/42	C. Bell	488	whole	15.3	0.40
	Blenheim, Ont.	6/8/42	H. Millar	609	shoots	15.9	0.35
	Ottawa, Ont.	13/8/42	H. Groh	555	whole	15.6	0.66
Apocynum medium Greene	Vancouver, B.C.	26/6/42	J. Davidson	175	whole	19.4	0.25
		26/6/42	J. Davidson	173	shoots	11.5	0.37
				174	roots	15.5	0.35
	Salmon Arm, B.C.	8/7/42	G.S. Armitage	267	whole	19.0	0.51
	Edmonton, Alta.	14/7/42	E.H. Moss	313	shoots	14.2	0.40
	Saskatoon, Sask.	23/6/42	R.C. Russell	290	leaves	12.6	0.30
				290A	stems	8.9	0.40
				290B	roots	8.0	0.30
	Clifton, N.B.	15/6/42	A.J. Wetmore	34	shoots	12.4	0.49
				37	leaves	15.7	0.46
				36	stems	8.8	0.48
				35	roots	9.6	0.33
	King's Co., N.B.	?/6/42	W.M. Kesson	139	whole	12.9	0.56
Apocynum medium Greene var. leuconeuron (Greene) Woodson	Dunrobin, Ont.	25/7/42	H.N. Racicot	377	whole	17.2	0.64
Apocynum sibiricum Jacq.	Saskatoon, Sask.	8/7/42	R.C. Russell	532	whole	13.2	0.38
		25/7/42	R.C. Russell	530	whole	12.6	0.23
		7/8/42	R.C. Russell	683	shoots	14.7	0.30
		25/8/42	R.C. Russell	870	whole	16.2	0.34
		18/9/42	R.C. Russell	1317	whole	13.2	0.23
	Morden, Man.	18/8/42	H.H. Marshall	758	whole	14.7	0.42
	Britannia Bay, Ont.	28/7/42	H.A. Senn, M.N. Zinck	417	whole	16.9	0.91
				419	leaves	22.1	1.35
				418	stems	12.1	0.24
	Shirley Bay, Ont.	7/8/42	H. Groh	513	shoots	20.4	1.31

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
	Kent Co., Ont.	15/8/42	C.C. Bell	632	shoots	12.3	0.46
	Ottawa, Ont.	25/8/42	H. Groh, W.N. Minshall	678	whole	18.2	0.89
	Ottawa, Ont.(42-478-5)	27/8/43	M.N. Zinck	1817	leaves	16.3	0.32
	Ottawa, Ont.(43-10-30)	8/9/43	M.N. Zinck	1835	leaves	17.9	0.32
	Britannia Bay, Ont.	8/9/43	M.N. Zinck	1844	leaves	20.4	0.85
	Ottawa, Ont.(43-5-3)	8/9/43	M.N. Zinck	1842	leaves	21.3	0.53
	Ottawa, Ont.(43-489-2)	8/9/43	M.N. Zinck	1841	leaves	19.4	0.54
	Val Tetreau, Que.	26/6/42	H. Groh	75	whole	17.1	0.69
Apocynum sibiricum Jacq. var. cordigerum (Greene) Fern.	Morden, Man.	25/6/42	H.H. Marshall	742	leaves	9.1	0.25
				741	stems	6.1	0.10
	Brebeuf, Que.	17/7/42	L. Coupal	300	shoots	13.1	0.55
				301	roots	10.8	0.31
Apocynum sibiricum Jacq. var. salignum (Greene) Fern.	Westbank, B.C.	3/7/42	G. Stevenson	509	shoots	12.6	0.71
	Saskatoon, Sask.	23/6/42	R.C. Russell	291	whole	14.5	0.34
	Ft. Saskatchewan, Alta.	29/6/42	G.H. Turner	224	whole	12.3	0.40
	Ft. Saskatchewan, Alta.	29/6/42	G.H. Turner	227	whole	13.3	0.41
	Katepua Beach, Sask.	1/7/42	L.T. Carmichael	275	whole	17.2	0.38
Arctostaphylos uva-ursi (L.) Spreng.	Carleton Co., Ont.	10/7/42	H.A. Senn, M.N. Zinck, D.C. McIntosh	215	whole	26.7	0.36
Arenaria peploides L.	Grave's Isl., N.S.	16/7/42	M.N. Zinck	367	whole	6.7	0.09
Arnica chamissonis Less.	Ottawa, Ont.	29/6/42	D.C. McIntosh	107	shoots	9.3	0.58
Artemisia abrotanum L.	Ottawa, Ont.	10/7/42	H.A. Senn	208	stems	7.2	0.04
				207	leaves	19.2	0.66
Artemisia absinthium L.	Ottawa, Ont.	5/8/42	M.A. Senn	477	whole	10.2	0.28
Artemisia vulgaris L.	Ottawa, Ont.	2/7/42	M.N. Zinck	150	whole	8.5	0.34
	Britannia Bay, Ont.	29/7/42	H.A. Senn, M.N. Zinck	426	shoots	9.2	0.60
Asclepias curassavica L.	Ottawa, Ont.(40-102-59)	16/4/43	M.N. Zinck	1518	shoots	8.0	0.15
	Ottawa, Ont.(40-94-9)	1/10/42	M.N. Zinck	944	leaves	11.3	0.42
				943	stems	8.0	0.19
	Ottawa, Ont.(40-420-2)	1/10/42	M.N. Zinck	948	leaves	11.4	0.41
				947	stems & flowers	8.1	0.24
	Ottawa, Ont.(40-64-7)	1/10/42	M.N. Zinck	946	leaves	11.7	0.27
				945	stems & flowers	8.3	0.15
	Ottawa, Ont.	15/10/42	M.N. Zinck	1347	pods	11.5	0.22
Asclepias incarnata L.	Brant Co., Ont.	25/6/42	R.F. Cain	899	leaves	19.5	0.68
				898	stems	11.4	0.43
		9/7/42	R.F. Cain	903	leaves	21.1	1.10
				904	stems	17.1	0.37
		27/7/42	R.F. Cain	913	leaves	23.4	1.32

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Asclepias incarnata L. - Continued				912	stems	16.1	0.39
		20/9/42	R.F. Cain	1502	leaves	16.9	1.82
				1503	stems	7.8	0.18
				1504	pods	16.6	0.09
	Preston, Ont.	3/7/42	H. Groh	781	whole	10.7	0.40
				782	leaves	18.4	1.30
				784	stems	11.3	0.27
				785	roots	7.8	0.19
				783	pods	18.6	0.22
	Rondeau Prov. Park, Ont.	27/7/42	C. Bell	489	whole	15.9	0.39
	Picton, Ont.	25/8/42	G. Anderson	659	shoots	18.4	0.57
	Carleton Co., Ont.	12/8/43	W.H. Minshall, S. Martin	1673A	leaves	16.7	0.96
				1673B	stems	11.6	0.20
		29/7/42	H.A. Senn, M.N. Zinck	416	shoots	16.1	0.53
	Shirley Bay, Ont.	7/8/42	H. Groh, O. Anderson	515	shoots	19.4	0.60
	Carleton Co., Ont.	10/7/42	H.A. Senn, M.N. Zinck, D.C. McIntosh	212	shoots	20.4	0.59
	Ottawa, Ont.(42-414-16)	7/7/42	H.A. Senn	192	whole	18.4	0.62
	Ottawa, Ont.(41-41-9)	18/8/43	M.N. Zinck	1726	leaves	17.4	1.20
	Ottawa, Ont.(42-414-33)	18/8/43	M.N. Zinck	1727	leaves	17.8	0.61
	Ottawa, Ont.(42-9-96)	19/8/43	M.N. Zinck	1741	leaves	20.9	0.88
	Ottawa, Ont.(42-9-96)	19/8/43	M.N. Zinck	1752	leaves	17.8	0.75
	Ottawa, Ont.(42-9-100)	19/8/43	M.N. Zinck	1740	leaves	17.8	0.64
	Ottawa, Ont.(41-42-9)	19/8/43	M.N. Zinck	1737	leaves	17.6	1.80
	Ottawa, Ont.(42-9-97)	19/8/43	M.N. Zinck	1732	leaves	18.8	1.20
	Ottawa, Ont.(41-31-125)	19/8/43	M.N. Zinck	1736	leaves	22.7	1.10
	Ottawa, Ont.(42-41-55)	19/8/43	M.N. Zinck	1735	leaves	17.3	1.20
	Ottawa, Ont.(42-414-16)	20/8/43	M.N. Zinck	1756	leaves	26.0	0.59
	Ottawa, Ont.(42-414-28)	20/8/43	M.N. Zinck	1757	leaves	18.2	0.67
	Ottawa, Ont.(39-109-1)	21/8/43	M.N. Zinck	1768	leaves	8.7	0.77
	Ottawa, Ont.(X-162-1-1)	23/8/43	M.N. Zinck	1779	leaves	19.2	1.60
	Ottawa, Ont.(X-2-814)	23/8/43	M.N. Zinck	1781	leaves	16.6	0.95
	Ottawa, Ont.(42-414-34)	23/8/43	M.N. Zinck	1782	leaves	19.9	0.71
	Ottawa, Ont.(42-414-112-1)	23/8/43	M.N. Zinck	1783	leaves	13.7	1.10
	Ottawa, Ont.(39-109-1-1)	23/8/43	M.N. Zinck	1780	leaves	17.7	1.40
	Ottawa, Ont.(41-41-9-2)	25/9/43	M.N. Zinck	1900	leaves	17.6	0.70
	Ottawa, Ont.(41-41-9)	30/9/42	M.N. Zinck	927	leaves	16.0	0.98
				926	stems	8.1	0.13

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
	Ottawa, Ont.(42-414-16)	30/9/42	M.N. Zinck	929	leaves	18.2	0.79
				928	stems	8.9	0.08
	Ottawa, Ont.(42-478-2)	30/9/42	M.N. Zinck	925	leaves	18.4	0.69
				924	stems	11.2	0.13
	Ottawa, Ont.(42-414-28)	30/9/42	M.N. Zinck	931	leaves	17.0	0.95
				930	stems	9.4	0.11
	Ottawa, Ont.(42-41-55)	5/10/42	M.N. Zinck	963	leaves	16.5	0.76
				962	stems	9.5	0.14
	Ottawa, Ont.	5/10/42	M.N. Zinck	974	leaves	14.9	1.78
				973	stems	8.0	0.13
	Ottawa, Ont.(39-78-8-1)	5/10/42	M.N. Zinck	976	leaves	17.7	0.86
				975	stems	8.1	0.10
	Ottawa, Ont.(41-31-125)	5/10/42	M.N. Zinck	972	leaves	17.1	0.71
				971	stems	8.5	0.16
	Ottawa, Ont.(X-2-814)	6/10/42	M.N. Zinck	984	leaves	17.1	0.97
				983	stems	7.7	0.18
	Ottawa, Ont.(42-9-97)	6/10/42	M.N. Zinck	1006	leaves	16.6	0.47
				1005	stems	10.1	0.19
	Ottawa, Ont.(X-162-1-1)	6/10/42	M.N. Zinck	982	leaves	18.0	1.10
				981	stems	8.0	0.12
	Ottawa, Ont.(42-17-2)	6/10/42	M.N. Zinck	1004	leaves	16.9	0.69
				1003	stems	10.0	0.22
	Ottawa, Ont.	?/10/42	M.N. Zinck	1341	pods	8.7	0.16
	Lascelles, Que.	9/7/42	H. Groh	201	leaves & flowers	23.0	0.89
				202	stems & roots	19.3	0.26
Asclepias incarnata L. forma albiflora Heller	Ottawa, Ont.(42-17-2)	19/8/43	M.N. Zinck	1750	leaves	22.2	1.20
	Ottawa, Ont.(42-17-3)	19/8/43	M.N. Zinck	1746	leaves	17.9	1.40
	Ottawa, Ont.(41-88-2)	20/8/43	M.N. Zinck	1763	leaves	16.8	0.75
	Ottawa, Ont.(41-88-2-A2)	25/9/43	M.N. Zinck	1901	leaves	18.9	0.54
	Ottawa, Ont.(41-88-2)	30/9/42	M.N. Zinck	921	leaves	17.7	0.77
				920	stems	7.3	0.06
	Ottawa, Ont.(42-9-96)	5/10/42	M.N. Zinck	970	leaves	15.7	0.66
				969	stems	8.4	0.09
	Ottawa, Ont.(42-17-3)	6/10/42	M.N. Zinck	1008	leaves	16.3	0.87
				1007	stems	8.8	0.21
Asclepias incarnata L. var. pulchra (Ehrh) Pers.	Ottawa, Ont.(42-474-14)	19/8/43	M.N. Zinck	1749	leaves	13.2	1.70
	Ottawa, Ont.(X-2-812-2)	16/9/43	M.N. Zinck	1886A	leaves	13.4	0.35
				1886B	stems	12.2	0.14
	Ottawa, Ont.(41-88-2)	30/9/42	M.N. Zinck	923	leaves	16.0	0.75

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Asclepias incarnata L. var. pulchra (Ehrh) Pere. - Continued				922	stems	8.7	0.05
	Ottawa, Ont.(X-2-812)	5/10/42	M.N. Zinck	978	leaves	17.9	1.18
				977	stems	10.4	0.13
Asclepias ovalifolia Dec.	Ft. Saskatchewan, Alta.	27/6/42	G.H. Turner	223	whole	14.0	0.64
	Lake Lenore, Sask.	24/6/42	R.C. Russell	296	whole	12.2	0.20
	Morden, Man.	25/6/42	H.H. Marshall	740	leaves	9.0	0.29
		25/6/42	H. H. Marshall	739	whole	9.7	0.28
Asclepias phytolaccoides Pursh	Rondeau Park, Ont.	10/9/42	C.C. Bell	844	whole	12.8	0.35
	Ottawa, Ont.(40-50-24)	6/10/42	M.N. Zinck	996	shoots	10.7	1.33
Asclepias speciosa Torr.	Summerland, B.C.	15/6/42	G.E. Woolliams	134	leaves	8.9	0.50
				134A	stems	8.8	0.50
	Vancouver, B.C.	26/6/42	J. Davidson	172	shoots	10.0	0.56
				171	roots	19.6	0.30
	Summerland, B.C.	30/6/42	G.E. Woolliams	235	stems	7.8	0.20
				234	leaves, flowers	10.9	0.60
	Westbank, B.C.	3/7/42	G. Stevenson	508	whole	9.5	0.63
	Summerland, B.C.	13/7/42	G.E. Woolliams	469A	leaves	8.7	1.20
		3/8/42	G.E. Woolliams	595	whole	10.3	0.95
		17/8/42	G.E. Woolliams	728	whole	11.0	0.91
		31/8/42	G.E. Woolliams	829	whole	10.4	0.63
	Lethbridge, Alta.	10/7/42	J.J. Sexsmith	378	whole	11.0	0.53
	Eastend, Sask.	?/7/42	H.S. Jones	287	whole	13.7	0.48
		?/8/42	H.S. Jones	718	whole	10.2	0.55
	Frontier, Sask.	?/8/42	L.W. Bird	816	shoots	10.0	0.87
				817	roots	9.2	0.22
		12/8/42	R.C. Russell, L.W. Bird	868	whole	12.2	0.39
	Morden, Man.	26/6/42	H.H. Marshall	745	whole	9.0	0.24
	Gladstone, Man.	17/6/42	W.A.F. Hagborg, B. Peturson	370	whole	9.7	0.33
	Brandon, Man.	?/7/43	W.B. Patterson	1603A	leaves	9.6	0.73
				1603B	stems	8.4	0.35
	Brandon, Man.	13/8/43	G.I. Todd	1725A	leaves	8.5	0.79
				1725B	stems	11.0	0.22
	Ottawa, Ont.(41-10-11)	19/8/43	M.N. Zinck	1748	leaves	8.3	0.73
	Ottawa, Ont.(42-10-2)	19/8/43	M.N. Zinck	1745	leaves	9.6	1.30
	Ottawa, Ont.(39-10-33)	24/8/43	M.N. Zinck	1802	leaves	9.0	0.72
	Ottawa, Ont.(41-10-11)	5/10/42	M.N. Zinck	965	leaves	10.5	0.79
				964	stems	10.4	0.24
	Ottawa, Ont.(42-10-2)	6/10/42	M.N. Zinck	988	leaves	9.6	0.66
				987	stems	9.1	0.22

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Asclepias Sullivantii Engelm.	Walpole Island, Ont.	10/8/43	S. Fox	1635A	leaves	8.5	2.10
				1635B	stems	6.7	0.30
Asclepias syriaca L.	Starback, Man.	23/8/42	A. Simpson	733	shoots	10.5	0.64
	Morden, Man.	16/9/43	Exp. Sta., Morden	1889	leaves	12.0	0.90
		16/9/43	Morden Exp. Sta.	1890	leaves	13.1	0.71
	Brant Co., Ont.	25/6/42	R.F. Cain	896	leaves	14.0	0.96
				897	stems	12.2	0.39
		4/7/42	R.F. Cain	1499	leaves	15.5	0.96
				1500	stems	14.4	0.24
				1501	flowers	16.0	0.47
		4/7/42	R.F. Cain	1505	leaves	11.1	0.66
				1506	stems	13.1	0.29
				1507	flowers	13.4	0.60
		4/7/42	R.F. Cain	1508	leaves	12.8	2.34
				1509	stems	11.3	0.23
				1510	pods	15.9	0.24
		4/7/42	R.F. Cain	902	leaves	16.1	1.30
				901	stems	16.4	0.40
		9/7/42	R.F. Cain	907	leaves	14.1	1.37
				906	stems	14.4	0.41
				905	flowers	16.5	0.81
		23/7/42	R.F. Cain	911	leaves	13.7	1.75
				910	stems	14.8	0.45
		27/7/42	R.F. Cain	913	leaves	23.3	1.32
		6/8/42	R.F. Cain	915	leaves	14.5	2.10
				914	stems	13.5	0.45
		16/8/42	R.F. Cain	1478	leaves	14.4	2.20
				1479	stems	15.0	0.22
		20/8/42	R.F. Cain	1480	leaves	10.5	1.77
				1481	stems	12.4	0.19
				1482	pods	17.3	0.38
		3/9/42	R.F. Cain	1485	leaves	11.4	1.71
				1486	stems	12.9	0.27
				1487	pods	14.1	0.32
		20/9/42	R.F. Cain	1490	leaves	11.7	1.90
				1491	stems	9.2	0.30
				1492	pods	16.1	0.63
	Ottawa, Ont.	3/6/42	H. Groh	2A	stems	8.9	0.40
				2B	leaves	9.7	0.40
	Peterborough, Ont.	3/6/43	F.C. Paterson	1545	leaves	9.9	0.22
				1546	stems	10.7	0.57

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Asclepias syriaca L. - Continued	Haliburton, Ont.	10/6/43	G. Anderson	1547	leaves	10.2	0.44
	Farran's Point, Ont.	10/6/43	O. Beckstead	1549	leaves	9.9	0.34
	Haliburton, Ont.	10/6/43	G. Anderson	1548	stems	9.6	0.49
	Laurentian View, Ont.	11/6/42	H. Groh	22A	stems	12.5	0.30
				23	roots	17.6	0.06
	Bobcaygeon, Ont.	15/6/43	W. Fulton	1553	leaves	10.3	0.54
	Glenarm, Ont.	15/6/43	D.P. McKenzie	1556	stems	11.5	0.46
	Finch, Ont.	15/6/43	W.J. Dingwall	1557A	leaves	9.8	0.40
				1557B	stems	11.9	0.56
	Cayuga, Ont.	15/6/43	Dept. of Agric.	1558A	leaves	10.4	0.41
				1558B	stems	11.7	0.47
	Ottawa, Ont.	20/6/42	T. Adams	40	whole	14.9	0.75
	Ottawa, Ont.	25/6/42	H. Groh, E.G. Anderson	65	leaves	11.5	0.50
				65A	stems	20.1	0.40
				66	roots	14.8	0.10
	Milford Bay, Ont.	28/6/42	W.H. Minshall	109	whole	13.3	0.62
	Ottawa, Ont.	29/6/42	H. Groh	84	leaves	14.7	0.60
				84A	stems	13.3	0.30
				85	roots	10.0	0.20
	Walkerton, Ont.	?/6/43	G.R. Gear	1561	whole	11.5	0.76
	Brant Co., Ont.	1/7/42	W.H. Minshall	156	shoots	13.2	0.88
	Lambton Co., Ont.	5/7/42	L.O. Gaiser	435	whole	13.8	0.55
		5/7/42	L.O. Gaiser	436	whole	12.1	0.52
	Lincoln Co., Ont.	7/7/42	F. Ransom	591	shoots	13.2	0.45
	Fallowfield Sta., Ont.	9/7/43	S. Martin	1598	leaves	11.9	0.60
		9/7/43	S. Martin	1600	leaves	9.6	0.71
	Carleton Co., Ont.	10/7/42	H.A. Senn, M.N. Zinck, D.C. McIntosh	209	leaves & flowers	15.7	1.19
				210	stems	20.0	0.58
	Fallowfield Sta., Ont.	12/7/43	S. Martin	1589	leaves	11.0	0.87
		12/7/43	S. Martin	1590	leaves	11.9	0.92
	Morpeth, Ont.	13/7/42	C.C. Bell	491	whole	12.5	0.67
	Ottawa, Ont.	15/7/42	H. Groh, G. Anderson	263	leaves	13.0	0.90
				263A	stems	16.3	0.40
				264	roots	8.2	0.30
	Ottawa, Ont.	19/7/43	S. Martin	1572B	stems	17.0	0.55
		27/7/42	H. Groh	394	stems	24.3	0.30
				394A	roots	11.9	0.20
				395	pods	26.9	0.50
	Simcoe Co., Ont.	?/7/43	S.L. Page	1567A	leaves	10.3	1.20
				1567B	stems	13.1	0.42

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
	Simcoe Co., Ont.	?/7/43	S.L. Page	1568A	leaves	10.2	0.91
				1568B	stems	12.6	0.35
		?/7/43	S.L. Page	1569A	leaves	12.8	0.41
				1569B	stems	9.5	0.32
	Ashton, Ont.	10/8/42	F.R. Gourlay	566	shoots	15.3	1.81
	Ottawa, Ont.	11/8/42	H. Groh	545	leaves	12.3	1.90
	Ottawa, Ont.(42-7-1)	22/7/43	M.D. Sutton	1586B	stems	14.6	0.50
				1586A	leaves	14.5	1.28
		5/8/43	M.N. Zinck	1606A	leaves	11.4	1.53
				1606B	stems	12.8	0.29
		11/8/43	M.N. Zinck	1651A	leaves	13.1	1.14
				1651B	stems	16.7	0.32
		18/8/43	M.N. Zinck	1729A	leaves	15.2	1.49
				1729B	stems	18.5	0.32
	Ottawa, Ont.(42-414-7)	19/8/43	M.N. Zinck	1744	leaves	12.3	0.98
	Ottawa, Ont.(42-414-6)	19/8/43	M.N. Zinck	1733	leaves	10.7	1.10
	Ottawa, Ont.(41-17-7)	19/8/43	M.N. Zinck	1738	leaves	14.1	0.96
	Ottawa, Ont.(41-31-15)	19/8/43	M.N. Zinck	1742	leaves	10.6	0.54
	Ottawa, Ont.(42-7-1)	20/8/43	M.N. Zinck	1759	leaves	14.5	1.18
	Ottawa, Ont.(42-497-7)	20/8/43	M.N. Zinck	1762	leaves	12.7	0.84
	Ottawa, Ont.(42-414-12)	20/8/43	M.N. Zinck	1758	leaves	12.9	1.50
	Ottawa, Ont.(X-2-813-2)	21/8/43	M.N. Zinck	1771	leaves	12.4	0.89
	Ottawa, Ont.(42-414-14)	21/8/43	M.N. Zinck	1772	leaves	8.8	0.76
	Ottawa, Ont.(42-414-37-1)	21/8/43	M.N. Zinck	1774	leaves	10.0	0.61
	Ottawa, Ont.(42-414-15)	21/8/43	M.N. Zinck	1769	leaves	8.5	0.71
	Ottawa, Ont.(40-420-12)	21/8/43	M.N. Zinck	1773	leaves	7.3	0.78
	Ottawa, Ont.(39-456-6)	21/8/43	M.N. Zinck	1777	leaves	12.4	1.40
	Ottawa, Ont.(40-17-7-1)	21/8/43	M.N. Zinck	1775	leaves	10.8	1.40
	Ottawa, Ont.(X-2-813)	21/8/43	M.N. Zinck	1770	leaves	11.6	1.20
	Ottawa, Ont.(42-7-1)	27/8/43	M.N. Zinck	1822A	leaves	15.0	1.43
				1822B	stems	17.0	0.28
		2/9/43	M.N. Zinck	1829A	leaves	14.2	1.43
				1829B	stems	17.1	0.32
	Ottawa, Ont.	4/9/42	H.L. Mitchell	761	stems	13.4	0.48
				762	pods	20.4	0.54
				763	leaves	11.9	1.90
	Ottawa, Ont.(42-7-1)	9/9/43	M.N. Zinck	1846A	leaves	15.2	1.58
				1846B	stems	14.1	0.37
	Ottawa, Ont.(43-479-2)	9/9/43	M.N. Zinck	1834	leaves	13.2	0.85
	Ottawa, Ont.(43-414-2)	20/9/43	M.N. Zinck	1888	leaves	17.8	1.40

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Asclepias syriaca L. - Continued	Ottawa, Ont.(42-414-37-3)	21/9/43	M.N. Zinck	1895A	leaves	16.0	0.58
				1895B	stems	15.1	0.34
	Ottawa, Ont.(42-7-1)	22/9/43	M.N. Zinck	1896A	leaves	14.1	1.36
				1896B	stems	8.9	0.29
	Ottawa, Ont.(42-7-1)	29/9/43	M.N. Zinck	1906A	leaves	10.9	1.18
				1906B	stems	6.6	0.29
	Ottawa, Ont.(42-414-12)	30/9/42	M.N. Zinck	933	leaves	11.8	1.99
				932	stems	7.4	0.21
	Ottawa, Ont.(42-7-1)	1/10/42	M.N. Zinck	942	leaves	11.9	0.74
				941	stems	10.0	0.19
	Ottawa, Ont.(42-7-1)	2/10/43	M.N. Zinck	1910	leaves	8.4	0.80
	Ottawa, Ont.(42-414-12-1)	2/10/43	M.N. Zinck	1911	leaves	10.3	0.91
	Ottawa, Ont.(X-2-813)	5/10/43	M.N. Zinck	957	leaves	11.7	0.93
				956	stems	10.6	0.19
	Ottawa, Ont.(40-17-7)	5/10/43	M.N. Zinck	959	leaves	12.6	1.12
				958	stems	8.5	0.20
	Ottawa, Ont.(39-456-6)	5/10/43	M.N. Zinck	961	leaves	12.5	1.06
				960	stems	7.6	0.24
	Ottawa, Ont.(42-414-6)	6/10/42	M.N. Zinck	1002	leaves	7.9	0.56
				1001	stems	12.2	0.27
	Ottawa, Ont.(42-7-1)	7/10/43	M.N. Zinck	1919	leaves	8.5	0.95
	Ottawa, Ont.	11/8/42	H. Groh	546	stems	21.1	0.30
				547	pods	24.4	0.40
	Carleton Co., Ont.	12/8/43	W.H. Minshall, S. Martin	1653	leaves	18.2	0.89
				1654	leaves	12.3	1.90
	Ottawa, Ont.	13/8/43	M.N. Zinck	1702	leaves	12.6	1.50
	Ottawa, Ont.	26/8/42	H. Groh	668	leaves	15.8	1.60
				669	stems	18.7	0.40
	Richmond, Ont.	30/8/43	M.N. Zinck	1826A	leaves	17.0	2.40
				1826B	stems	13.5	0.36
	Preston, Ont.	2/9/42	H. Groh	776	whole	13.1	1.01
	Ottawa, Ont.	3/9/43	H. Groh	1899	leaves	9.6	2.30
	Ottawa, Ont.	11/9/42	H. Groh	803	leaves	13.7	2.30
				804	stems	11.5	0.20
	Kitchener, Ont.	16/9/42	F.H. Montgomery	1052	shoots	11.5	0.44
				1053	roots	7.6	0.11
	Ottawa, Ont.	27/9/43	M.N. Zinck	1905A	leaves	12.4	0.51
				1905B	stems	12.9	0.25
	Ottawa, Ont.	29/9/43	M.N. Zinck	1908	leaves	11.6	0.69
	Crediton, Ont.	?/9/42	L.O. Gaiser	823	whole	12.8	0.36

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
	Peterborough, Ont.	5/10/43	H.A. Senn	1915A	leaves	17.1	0.71
				1915B	stems	22.3	0.26
	Hamilton, Ont.	?/10/42	W. Garland	1342	pods	6.9	0.63
	Carleton Co., Ont.	?/10/42	School children	1346	seed	29.0	0.30
	Brebeuf, Que.	17/7/42	L. Coupal	299	whole	10.6	0.75
	Perkins Mill, Que.	5/8/42	G. Anderson	504	leaves & pods	16.8	2.82
				505	stems	24.4	0.37
	Gatineau Point, Que.	5/8/42	G. Anderson	506	leaves & pods	15.0	1.48
				507	stems	18.7	0.53
	Carleton Co., N.B.	29/6/42	M.B. Moore, S.P. Clarkson, J.L. Howatt	863	shoots	8.7	0.47
	Auburn, N.S.	5/7/42	A.E. Roland	248	leaves	14.2	0.70
				248A	stems	16.5	0.40
	Waterville, N.S.	27/7/42	E. Buchanan	455	shoots	13.5	0.81
		14/10/42	R.M. Lewis	1348	whole	10.3	0.41
Asclepias tuberosa L.	Brantford, Ont.	24/7/42	D.W. Minshall	390	leaves	12.5	1.01
				391	stems	11.4	0.22
				392	roots	12.2	0.16
	Brantford, Ont.	?/8/42	F. Luck	730	shoots	13.6	1.16
				731	roots	8.8	0.29
	Ottawa, Ont.(41-88-3)	19/8/43	M.N. Zinck	1739	leaves	13.4	1.50
	Ottawa, Ont.(42-17-4)	19/8/43	M.N. Zinck	1731	leaves	16.3	1.70
		24/8/43	M.N. Zinck	1797	leaves	7.5	0.68
	Brant Co., Ont.	?/9/42	D.W. Minshall	1339	stems	4.0	0.20
				1340	roots	10.7	0.12
				1343	pods	4.6	0.20
	Ottawa, Ont.(42-17-4)	6/10/42	M.N. Zinck	991	leaves	15.7	0.90
				990	stems	9.8	0.27
	Ottawa, Ont.(41-88-3)	6/10/42	M.N. Zinck	986	leaves	12.8	1.09
				985	stems	10.1	0.26
Asclepias verticillata L.	Ottawa, Ont.(X-162-1-2)	6/10/42	M.N. Zinck	993	leaves	16.0	0.68
				992	stems	8.9	0.17
Aster commutatus (T. & G.) Gray	Eastend, Sask.	?/8/42	H.S. Jones	1044	whole	5.8	0.18
Aster ericoides L.	Eastend, Sask.	?/8/42	H.S. Jones	646	whole	5.9	0.33
Aster laevis L.	Rosthern, Sask.	18/8/42	R.C. Russell	867	whole	6.8	0.43
	Beatty, Sask.	20/8/42	R.C. Russell	866	whole	6.5	0.20
	Stewart Valley, Sask.	1/9/42	B.J. Sallans, R.J. Ledingham	878	whole	9.0	0.29
	Eastend, Sask.	?/8/42	H.S. Jones	1051	whole	5.6	0.36
				642	whole	6.6	0.37

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analysed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Aster laevis L. - Continued	Eastend, Sask.	?/8/42	H.S. Jones	651	whole	6.7	0.44
Aster macrophyllus L.	Ottawa, Ont.	25/8/42	H. Groh	676	whole	5.2	0.29
Aster novi-belgii L.	Eastend, Sask.	?/8/42	H.S. Jones	1050	whole	5.7	0.25
Aster salicifolius Lam.	Eastend, Sask.	?/8/42	H.S. Jones	643	whole	5.8	0.40
Atropa belladonna L.	Ottawa, Ont.(41-462-7)	16/10/42	M.N. Zinck	1102	leaves	8.2	0.02
				1101	stems	10.6	0.01
Baptisia australis (L.) R. Br.	Ottawa, Ont.(39-94-39)	7/7/42	H.A. Senn, D.C. McIntosh	162	whole	20.6	0.34
Beta vulgaris L.	Ottawa, Ont.	?/10/42	M.N. Zinck	1064	leaves	5.5	0.04
				1063	root	5.2	0.05
Betula papyrifera Marsh.	Dropmore, Man.	?/8/42	Skinner Nursery	463	bark	30.3	0.34
Brassica sp.	Ottawa, Ont.	16/10/42	M.N. Zinck	1134	leaves & stems	4.0	0.13
Brassica oleracea L. var. gemmifera Jenker	Ottawa, Ont.	23/8/43	M.N. Zinck	1791	leaves	10.7	0.26
Cakile edentula (Bigel.) Hook.	East River Port, N.S.	15/7/42	M.N. Zinck	361	whole	9.0	0.27
Campanula alliariaefolia Willd.	Ottawa, Ont.(40-75-23)	29/6/42	D.C. McIntosh	88	shoots	11.7	0.56
				89	roots	6.4	0.19
Campanula americana L.	Morpsth, Ont.	27/7/42	C.C. Bell	494	whole	7.2	0.38
Campanula betonicaefolia Sibth. & Sm.	Ottawa, Ont.(40-75-234)	29/6/42	D.C. McIntosh	90	shoots	10.7	0.49
	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	115	shoots	11.6	0.46
				113	shoots	13.5	0.66
Campanula carpatica Jacq.	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	125	whole	7.8	0.64
				128	whole	11.1	0.80
				132	shoots	10.9	0.64
Campanula fenestrellata Feer	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	130	whole	10.1	0.38
Campanula glomerata L.	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	126	whole	9.2	0.54
Campanula glomerata L. var. superba	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	116	whole	9.3	0.61
Campanula latifolia L.	Ottawa, Ont.	23/6/42	H.A. Senn	58	shoots	23.8	0.58
	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	124	shoots	9.5	0.66
				122	shoots	8.2	0.53
Campanula marchesetti Witasek	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	129	whole	11.8	0.55
Campanula persicifolia L.	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	123	whole	10.3	0.39
Campanula rapunculoides L.	Crediton, Ont.	4/7/42	L.O. Gaiser	438	whole	10.6	0.36
		15/7/42	L.O. Gaiser	432	shoots	12.0	0.27
				433	roots	7.4	0.10
	Kitchener, Ont.	11/7/42	F.H. Montgomery	1054	whole	4.8	0.34
	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	121	whole	9.8	0.75
	Fredericton, N.B.	25/7/42	J.L. Howatt	860	whole	6.2	0.20
	Kentville, N.S.	13/7/42	R.M. Lewis	621	whole	7.4	0.33

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analysed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Campanula rotundifolia L.	Vancouver, B.C.	26/6/42	J. Davidson	187	whole	10.6	0.23
	Fort Sask., Alta.	8/7/42	G.H. Turner	311	whole	12.4	0.51
	Pearce, Alta.	10/7/42	J.J. Sexsmith	379	shoots	9.0	0.28
	Katepwa Beach, Sask.	1/7/42	L.T. Carmichael	277	shoots	13.3	0.40
	Sutherland, Sask.	10/7/42	R.C. Russell	538	whole	10.2	0.28
	Morden, Man.	1/7/42	H.H. Marshall	750	whole	11.0	0.26
	Ottawa, Ont.	23/6/42	H.A. Senn	57	shoots	11.3	0.43
	Fredericton, N.B.	22/7/42	S.F. Clarkson, J.L. Howatt	853	whole	11.3	0.22
Campanula rotundifolia L. var. intercedens (Witasek) Farw.	Galt, Ont.	7/9/42	F.H. Montgomery	1055	whole	9.6	0.49
	Parker's Cove, N.S.	22/8/42	R.M. Lewis	809	whole	8.2	0.55
Campanula trachelium L.	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	118	whole	10.8	0.68
				119	roots	8.4	0.29
				120	whole	12.0	0.76
Cannabis sativa L.	E. Chatham, Ont.	28/8/42	D.A. Arnott	1300	steme, leaves	4.2	0.17
	Ottawa, Ont.	9/7/42	Anonymous	200	whole	10.8	0.24
Cardaria draba (L.) Desv.	Ottawa, Ont.	8/7/42	G. Anderson	199	whole	7.8	0.31
				258	seed heads	8.2	0.10
Catananche coerulea L.	Vancouver, B.C.	26/6/42	J. Davidson	178	whole	6.9	0.27
Centaurea jacea L.	Ottawa, Ont.	5/8/42	H.A. Senn	483	shoots	8.6	0.48
Centaurea macrocephala Puschl.	Ottawa, Ont.	7/7/42	H.A. Senn, D.C. McIntosh	161	whole	9.4	0.27
Chelidonium majus L.	Kitchener, Ont.	16/9/42	F.H. Montgomery	1065	whole	10.7	0.37
	Beamsville, Ont.	20/7/42	F. Ransom	587	whole	11.2	0.31
	Ottawa, Ont.	24/6/42	H. Groh	59	shoots	15.8	0.49
				60	roots	10.4	0.34
	Fredericton, N.B.	8/7/42	J.L. Howatt, S.F. Clarkson	850	whole	9.5	0.26
Chenopodium album L.	Bourgald'e Port, N.S.	12/7/42	M.N. Zinck	368	whole	8.7	0.26
	East River Port, N.S.	15/7/42	M.N. Zinck	362	whole	8.9	0.33
Chrysothamnus nauseosus (Pall.) Britt. ssp. Bigelovia graveolens Nutt.	Lytton, B.C.	23/6/42	Hardy	895	whole	12.5	0.24
Chrysothamnus nauseosus (Pall.) Britt. var. speciosus (Nutt.) Hall.	Summerland, B.C.	15/6/42	G.E. Woolliams	136	leaves	22.1	0.25
				137	stems	8.2	0.23
				138	roots	3.5	0.67
		30/6/42	G.E. Woolliams	237	leaves	17.4	0.14
				236	woody stems	5.7	0.18
		13/7/42	G.E. Woolliams	467	leaves, stems	6.9	0.16
		3/8/42	G.E. Woolliams	598	leaves, stems	8.4	0.16
		17/8/42	G.E. Woolliams	725	leaves, small stems	20.0	0.55

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Chrysothamnus nauseosus (Pall.) Britt. var. speciosus (Nutt.) Hall. - Continued				724	woody stems	5.8	0.16
		31/8/42	G.E. Woolliams	832	leaves, small stems	9.8	0.39
				833	woody stems	3.4	0.54
Cichorium intybus L.	Vancouver, B.C.	26/6/42	J. Davidson	189	shoots	7.3	0.13
	Beamsville, Ont.	14/7/42	F. Ransom	582	shoots	7.7	0.11
	Harwich Twp., Ont.	10/8/42	C.C. Bell	613	whole	5.8	0.09
	Blenheim, Ont.	13/8/42	H. Millar	607	shoots	7.5	0.18
	Preston, Ont.	2/9/42	H. Groh	778	whole	6.1	0.11
	Crediton, Ont.	?/9/42	L.O. Gaiser	788	whole	6.7	0.21
	Ottawa, Ont.	11/6/42	W.H. Minshall	27	shoots	6.3	0.20
				28	roots	8.7	0.24
	Ottawa, Ont.	2/7/42	M.N. Zinck	151	whole	10.0	0.27
		24/8/42	M.N. Zinck	1795	leaves	10.7	0.29
	Highbury, N.S.	17/7/42	R.M. Lewis	620	whole	6.3	0.06
Comptonia peregrina (L.) Coult.	Carleton Co., Ont.	10/7/42	H.A. Senn, M.N. Zinck, D.C. McIntosh	217	whole	23.7	0.11
Convolvulus americanus (Sims) Greene	Eastend, Sask.	?/8/42	H.S. Jones	647	whole	15.7	0.31
Convolvulus arvensis L.	Ottawa, Ont.	22/6/42	H.A. Senn	42	shoots	15.2	0.23
		15/7/42	H. Groh	268	shoots	13.8	0.20
Convolvulus sepium L.	Victoria, B.C.	30/6/42	A.E. Pickford	197	shoots	13.9	0.14
	Morden, Man.	16/7/42	H.H. Marshall	756	shoots	8.0	0.13
	Rondeau Park, Ont.	17/8/42	C.C. Bell	628	shoots	17.6	0.22
	Ottawa, Ont.	7/8/42	H. Groh, G. Anderson	514	shoots	16.2	0.17
	Kentville, N.S.	3/7/42	R.M. Lewis	246	shoots	16.4	0.40
	Halifax, N.S.	24/9/42	M.S. Brown	1043	whole	10.1	0.32
Convolvulus spithameus L.	Shoalbake, Man.	7/7/42	M.G. Dudley	399	whole	16.9	0.19
Cotinus coggygria Scop.	Ottawa, Ont.	2/7/42	D.C. McIntosh	141	leaves	28.0	0.19
				142	stems	10.3	0.06
Coreopsis grandiflora Nutt.	Ottawa, Ont.	29/6/42	D.C. McIntosh	104	whole	10.2	0.13
Crepis capillaris (L.) Wallr.	Ottawa, Ont.	20/7/42	H. Groh	317	whole	9.7	0.57
Crepis sp.	Humboldt, Sask.	24/6/42	R.C. Russell	295	whole	9.7	0.17
Crepis runcinata (James) T. & G.	Watson, Sask.	29/7/42	B.J. Sallans, R.C. Russell	522	whole	9.4	0.80
	Eastend, Sask.	30/7/42	R.A. Wilkinson	557	whole	10.7	0.34
	Morden, Man.	25/6/42	H.H. Marshall	735	shoots	7.6	0.28
Crepis tectorum L.	Fort Sask., Alta.	27/6/42	G.H. Turnsr	256	tops	12.0	0.22
Cuscuta gronovii Willd.	Picton, Ont.	25/8/42	G. Anderson	660	whole	12.5	0.43
Cyclanthera pedata Schrad.	Ottawa, Ont.	12/10/42	M.N. Zinck	949	shoots	7.5	0.09
Cynanchum furcatum L. Pers.	Ottawa, Ont.	7/7/42	H.A. Senn, D.C. McIntosh	165	shoots	18.0	0.46

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Cynanchum luteum Steud.	Ottawa, Ont.	23/6/42	H.A. Senn	55	shoots	17.7	0.47
Cynanchum medium R.Br.	Ottawa, Ont.	7/7/42	H.A. Senn, D.C. McIntosh	167	shoots	16.6	0.44
Cynanchum officinale	Ottawa, Ont.	7/7/42	H.A. Senn, D.C. McIntosh	166	shoots	17.5	0.61
Daucus carota L.	Ottawa, Ont.	1/10/42	M.N. Zinck	940	shoots	7.8	0.14
				939	roots	24.1	0.15
Delphinium ajacis L.	Ottawa, Ont.	1/10/42	M.N. Zinck	1061	whole	11.2	0.14
Echium vulgare L.	Ottawa, Ont.	2/7/42	M.N. Zinck	149	whole	8.0	0.26
Erigeron asper Nutt.	Morden, Man.	1/7/42	H.H. Marshall	749	whole	10.2	0.17
Erigeron canadensis L.	Morden, Man.	1/7/42	H.H. Marshall	754	whole	7.2	0.16
	Ottawa, Ont.	23/6/42	H.A. Senn	52	shoots	6.1	0.39
				53	roots	4.6	0.15
	Ottawa, Ont.	20/8/42	H. Groh	601	whole	7.4	0.35
Erigeron speciosus DC.	Ottawa, Ont.	29/6/42	D.C. McIntosh	96	shoots	8.5	0.36
Erigeron subtrinervis Rydb.	Ottawa, Ont.	29/6/42	D.C. McIntosh	105	shoots	8.7	0.40
Eucommia ulmoides Oliver	Saanichton, B.C.	1/11/42	Dom. Exp. Station	1359	leaves	10.9	1.37
				1361	woody stems	7.7	0.42
				1360	stem bark	19.8	1.03
Euonymus alata (Thunb.) Sieb.	Saanichton, B.C.	1/11/42	Dom. Exp. Station	1367	stems	8.8	0.19
				1366	stem bark	10.2	0.22
				1365	root bark	7.7	0.25
				1368	roots	9.2	0.97
	Ottawa, Ont.	24/7/42	D.C. McIntosh	345	leaves	13.9	1.19
				346	woody stems	11.0	0.34
		23/7/42	D.C. McIntosh	327	leaves	15.3	0.66
				328	woody stems	10.1	0.23
Euonymus europea L.	Saanichton, B.C.	1/11/42	Dom. Exp. Station	1355	stems	9.0	0.31
				1354	stem bark	12.0	0.22
				1353	root bark	10.1	3.23
	Ottawa, Ont.	23/7/42	D.C. McIntosh	325	leaves	13.5	1.19
				326	stems	7.0	0.44
		23/7/42	D.C. McIntosh	329	leaves, fruit	14.2	1.20
				330	woody stems	8.9	0.47
		23/7/42	D.C. McIntosh	337	leaves	12.1	0.89
				338	woody stems	7.1	0.37

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Euonymus europea L. - Continued	Ottawa, Ont.	23/7/42	D.C. McIntosh	353	leaves	11.6	1.24
				354	woody stems	7.7	0.45
		23/7/42	D.C. McIntosh	349	leaves	12.9	1.27
				350	woody stems	6.6	0.45
		23/7/42	D.C. McIntosh	355	leaves	12.4	1.21
				356	woody stems	8.2	0.62
		23/7/42	D.C. McIntosh	359	leaves	12.1	1.20
				360	woody stems	7.6	0.48
Euonymus europaea L. var. angustifolia K.F. Schulz.	Ottawa, Ont.	24/7/42	D.C. McIntosh	342	woody stems	5.6	0.31
				341	leaves	13.5	1.03
Euonymus europaea L. var. intermedia Gaud.	Ottawa, Ont.	23/7/42	D.C. McIntosh	321	leaves, fruit	15.9	0.99
				322	woody stems	7.2	0.29
Euonymus japonica L.	Saanichton, B.C.	1/11/42	Dom. Exp. Station	1372	leaves	34.4	0.33
				1375	stems	10.8	0.05
				1374	stem bark	32.7	0.11
				1373	root bark	16.1	0.07
Euonymus lanceifolius Loes.	Ottawa, Ont.	24/7/42	D.C. McIntosh	343	leaves, fruit	12.0	1.11
				344	woody stems	6.4	0.34
Euonymus maackii Rupr.	Saanichton, B.C.	1/11/42	Dom. Exp. Station	1356	root bark	9.5	6.06
				1357	stem bark	11.9	0.82
				1358	stems	9.1	0.87
	Ottawa, Ont.	24/7/42	D.C. McIntosh	357	leaves	13.4	1.33
				358	woody stems	9.4	0.80
Euonymus nana Bieb.	Ottawa, Ont.	24/7/42	D.C. McIntosh	351	leaves	11.7	1.08
				352	woody stems	7.4	0.36
Euonymus nikoensis Nakai	Ottawa, Ont.	23/7/42	D.C. McIntosh	323	leaves	14.6	0.66
				324	woody stems	6.4	0.26
Euonymus obovata Nutt.	Ottawa, Ont.	24/7/42	D.C. McIntosh	339	leaves	20.8	0.62
				340	woody stems	6.5	0.38
Euonymus radicans Sieb.	Saanichton, B.C.	1/11/42	Dom. Exp. Station	1379	leaves	9.1	0.27
				1380	stem bark	8.4	1.30
				1381	root bark	6.3	1.68
				1382	small stems	4.8	1.01
		1/11/42	Dom. Exp. Station	1376	leaves	8.5	0.39

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
				1378	small stems	6.1	0.68
				1377	stem bark	13.1	1.09
		1/11/42	Dom. Exp. Sta.	1370	stem bark	13.1	1.51
				1369	leaves	5.7	0.44
				1371	stems	4.4	0.46
Euonymus verrucosa Scop.	Ottawa, Ont.	23/7/42	D.C. McIntosh	333	leaves	15.7	1.06
				334	woody stems	13.1	0.23
Euonymus yedoensis Koehne	Saanichton, B.C.	1/11/42	Dom. Exp. Station	1362	root bark	9.6	0.56
				1363	stem bark	11.9	0.23
				1364	stems	7.7	0.25
	Ottawa, Ont.	13/10/42	M.N. Zinck	952	leaves	15.8	2.69
				951	small stems	9.2	0.76
				953	fruit	28.1	0.60
Euonymus yedoensis Koehne var. koehneana Loss.	Ottawa, Ont.	23/7/42	D.C. McIntosh	331	leaves	13.0	1.48
				332	woody stems	7.0	0.46
		23/7/42	D.C. McIntosh	347	leaves, fruit	14.7	1.19
				348	woody stems	7.1	0.38
Eupatorium maculatum (L.)	Ottawa, Ont.	29/7/42	H.A. Senn, M.N. Zinck	428	stems, flowers	8.8	0.29
				427	leaves	14.9	0.54
		5/8/42	H.A. Senn	482	shoots	11.3	0.34
	Highbury, N.S.	17/7/42	R.M. Lewis	624	whole	6.9	0.31
Eupatorium perfoliatum L.	Ottawa, Ont.	29/7/42	H.A. Senn, M.N. Zinck	420	leaves, flowers	22.5	0.25
				421	stems	4.0	0.01
	Highbury, N.S.	17/7/42	R.M. Lewis	616	flowers, leaves, stems	11.2	0.08
Eupatorium purpursum L.	Shagomock, N.B.	29/6/42	M.B. Moore, S.F. Clarkson, J.L. Howatt	851	whole	4.5	0.07
Eupaterium rugosum Houtt.	Ottawa, Ont.	5/8/42	H.A. Senn	478	leaves, flowers	13.5	0.82
				479	stems	2.5	0.11
Euphorbia corollata L.	Point Pelee, Ont.	5/6/42	H.T. Güssow	8	whole	18.9	0.28
	Morpeth, Ont.	27/7/42	C.C. Bell	496	whole	11.0	0.24
	Crediton, Ont.	?/9/42	L.O. Gaiser	795	whole	10.1	0.25
		?/9/42	L.O. Gaiser	793	stems, leaves, fruit	11.1	0.22
				794	roots	10.8	1.75
Euphorbia cyparissias L.	Vancouver, B.C.	23/6/42	J. Davidson	181	whole	11.6	0.38

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Euphorbia cyparissias L. - Continued	Vineland, Ont.	1/10/42	L. Richardsen	1310	whole	12.5	0.26
	L'Orignal, Ont.	28/7/42	E.G. Anderson	415	whole	14.7	0.18
	Gatineau, Que.	26/6/42	H. Groh	73	whole	13.0	0.54
	Charlettetown, P.E.I.	1/7/42	R.R. Hurst	302	whole	18.4	0.28
	Kentville, N.S.	8/7/42	R.M. Lewis	250	leaves, stems, roots	14.1	0.39
		8/7/42	R.M. Lewis	251	flowers, leaves, stems	12.0	0.21
Euphorbia deflexa Sibth. & Sm.	Ottawa, Ont.	6/4/43	M.N. Zinck	1519	whole	12.2	0.32
		26/5/43	M.N. Zinck	1540	whole	10.1	0.15
Euphorbia esula L.	Vancouver, B.C.	23/6/42	J. Davidson	170	leaves, stems, seeds	8.7	0.18
	Pearce, Alta.	10/7/42	J.J. Sexsmith	384	whole	12.3	0.23
	Ft. Sask., Alta.	13/7/42	G.H. Turner	309	whole	12.4	0.41
	N. Battleford, Sask.	17/9/42	R.C. Russell	1316	whole	9.4	0.25
	Sydney, N.S.	26/6/42	R.M. Lewis	626	whole	10.2	0.21
Euphorbia exigua L.	Ottawa, Ont.	26/5/43	M.N. Zinck	1541	whole	8.2	0.15
Euphorbia glyptosperma Engelm.	Melrose, Man.	15/9/43	C.C. Kusmerchak	1880	whole	8.9	0.68
	Ottawa, Ont.	26/8/42	H. Groh	672	whole	17.8	0.57
Euphorbia helioscopia L.	Ft. Sask., Alta.	1/7/42	G.H. Turner	222	whole	12.7	0.22
	New Minas, N.S.	3/7/42	R.M. Lewis	242	whole	12.4	0.17
Euphorbia ipecacuanhae L.	Ottawa, Ont.	9/3/43	M.N. Zinck	1513	whole	11.2	0.17
Euphorbia lagasceae Spreng.	Ottawa, Ont.	9/3/43	M.N. Zinck	1515	whole	13.3	0.42
Euphorbia lathyrus L.	Vancouver, B.C.	23/6/42	J. Davidson	182	whole	12.2	0.15
	Ottawa, Ont.	9/3/43	M.N. Zinck	1511	whole	13.3	0.22
		9/3/43	M.N. Zinck	1512	whole	14.1	0.16
Euphorbia marginata Pursh.	Hamilton, Ont.	7/8/42	W. Garland	826	leaves, fruit	12.4	0.48
				827	stems	5.6	0.16
Euphorbia peplus L.	Victoria, B.C.	30/6/42	A.E. Pickford	198	whole	15.2	0.31
	Vancouver, B.C.	26/7/42	J.W. Eastham	517	whole	13.7	0.19
	Hamilton, Ont.	20/7/42	F. Ransom	581	whole	12.8	0.26
	Westboro, Ont.	24/9/42	H. Groh	882	whole	13.9	0.15
Euphorbia polychroma Kern.	Ottawa, Ont.	7/7/42	H.A. Senn, D.C. McIntosh	168	stems, leaves, fruit	18.5	0.31
Euphorbia polygonifolia L.	Morpeth, Ont.	1/8/42	C.C. Bell	499	leaves, stems, fruit	26.2	0.20
Euphorbia preslii Guss.	Rondeau Park, Ont.	8/9/42	C.C. Bell	837	whole	12.2	0.23
Euphorbia serpyllifolia Pers.	Craigmyle, Alta.	5/8/42	A.H. Brinkman	521	whole	15.9	0.28
	Eastend, Sask.	1942	H.S. Jones	719	whole	13.7	0.26
	Fort Garry, Man.	26/8/42	W.A. Hagborg	764	whole	10.2	0.38

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Euphorbia stricta L.	Ottawa, Ont.	9/3/43	M.N. Zinck	1514	whole	13.7	0.16
Euphorbia supina Raf.	Rondeau Park, Ont.	8/9/42	C.C. Bell	843	whole	13.2	0.43
		31/7/42	C.C. Bell	498	leaves, stems	15.5	0.45
	Ottawa, Ont.	26/8/42	H. Groh	673	whole	18.9	0.34
Euphorbia vermiculata Raf.	Ottawa, Ont.	7/8/42	M.N. Zinck	503	whole	18.9	0.62
Ficus carica L.	Vancouver, B.C.	26/6/42	J. Davidson	191	leaves	16.6	0.22
				190	woody stems	10.8	0.20
Foeniculum vulgare Mill.	Ottawa, Ont.	?/10/42	M.N. Zinck	1059	whole	9.0	0.14
Fucus vesiculosus L.	Chester, N.S.	22/7/42	M.N. Zinck	364	whole	16.9	0.25
Galinsoga ciliata (Raf.) Blake	Ottawa, Ont.	7/9/42	H. Groh	786	whole	5.8	0.53
Gentiana crinita Froel.	Ottawa, Ont.	25/8/42	H. Groh, W.H. Minshall	677	whole	25.7	0.16
Geranium pratense L.	Ottawa, Ont.	29/6/42	D.C. McIntosh	101	shoots	16.5	0.13
Gerardia paupercula (Gray) Britton	Ottawa, Ont.	1/9/42	J.B. MacLaughlin	787	whole	13.4	0.19
Grindelia squarrosa (Pursh) Dunal.	Eastend, Sask.	30/7/42	R.A. Wilkinson	561	whole	17.3	0.20
	S. Saskatoon, Sask.	7/8/42	R.C. Russell	679	whole	16.0	0.16
	Eastend, Sask.	?/9/42	H.S. Jones	1049	whole	11.1	0.09
		?/9/42	H.S. Jones	652	whole	16.5	0.30
	St. Vital, Man.	9/8/42	A. Simpson	568	whole	16.3	0.26
	Selkirk, Man.	?/8/42	C. Meyer	500	shoots	21.2	0.24
	Westboro, Ont.	14/8/42	H. Groh	570	whole	12.3	0.26
	Wellington, Ont.	20/8/42	L.N. McFaul	656	shoots	17.2	0.29
	Belleville, Ont.	25/8/42	G. Andersen	658	shoots	16.6	0.30
Gutierresia diversifolia Greene	Eastend, Sask.	?/8/42	H.S. Jones	717	whole	13.8	0.21
Gypsophila paniculata L.	Ottawa, Ont.	29/6/42	D C. McIntosh	98	shoots	10.2	0.23
Haplopappus spinulosus (Pursh) DC.	Saskatoon, Sask.	9/7/42	R.C. Russell	533	whole	5.6	0.27
Helenium autumnale L. var. grandiflorum (Nuttall) T. & G.	Cloverdale, B.C.	4/8/42	Dom. Ent. Lab.	578	whole	9.6	0.08
Helianthus annuus L.	Ottawa, Ont.	5/8/42	H.A. Senn	484	shoots	6.6	0.26
Helianthus divaricatus L.	Carlston Co., Ont.	10/7/42	H.A. Senn, M.N. Zinck, D.C. McIntosh	218	whole	8.8	0.47
Helianthus tuberosus L.	Ottawa, Ont.	17/10/42	A. Gosselin	1344	shoots	4.5	0.08
		19/11/42	H.A. Senn	1308	root	3.7	0.20
		30/11/42	A. Gosselin	1352	root	3.0	0.17
Heliopsis helianthoides Sweet.	Ottawa, Ont.	29/6/42	D.C. McIntosh	106	shoots	8.5	0.26
Hieracium aurantiacum L.	Milford Bay, Ont.	28/6/42	W.H. Minshall	110	whole	11.8	0.33
	Beamsville, Ont.	9/7/42	F. Ransom	584	whole	12.6	0.34
	Ottawa, Ont.	25/6/42	E.G. Anderson	69	whole	11.9	0.33
		27/8/43	M.N. Zinck	1806	leaves	11.7	0.37
		27/8/43	M.N. Zinck	1807	leaves	12.4	0.34
		27/8/43	M.N. Zinck	1809	leaves	19.2	0.27

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analysed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Hieracium aurantiacum L. - Continued		27/8/43	M.N. Zinck	1819	leaves	11.2	0.26
		25/9/43	M.N. Zinck	1903	leaves	10.5	0.42
		16/10/42	M.N. Zinck	1104	leaves, roots	8.6	0.09
	Ancienne Lorette, Que.	18/6/42	W.H. Minshall	33	whole	8.5	0.30
	Lascelles, Que.	12/7/42	H. Groh	230	whole	9.5	0.37
	Brebeuf, Que.	3/8/42	L. Coupal	461	whole	7.7	0.22
	Everett, N.B.	27/6/42	S.F. Clarkson, M.B. Moore, J.L. Howitt	857	whole	6.6	0.14
	Wolfville, N.S.	17/6/42	R.M. Lewis	83	whole	12.1	0.34
Hieracium canadense Michx.	Fort Sask., Alta.	14/7/42	G.H. Turner	374	whole	7.6	0.20
	Ottawa, Ont.	15/7/42	H. Groh	2[illegible]	whole	9.0	0.27
		27/8/43	M.N. Zinck	1808	leaves	15.0	0.47
		27/8/43	M.N. Zinck	1814	leaves	14.8	0.22
	Brebeuf, Que.	3/8/42	L. Coupal	460	whole	9.3	0.17
Hieracium florentinum All.	Ottawa, Ont.	13/6/42	H. Groh	31	shoots	9.3	0.24
		27/8/43	M.N. Zinck	1820	leaves	9.9	0.30
	New Minas, N.S.	5/7/42	R.M. Lewis	247	whole	13.5	0.48
Hieracium floribundum Wimm. & Grab.	Ottawa, Ont.	27/8/43	M.N. Zinck	1816	leaves	13.7	0.40
	Kentville, N.S.	17/6/42	R.M. Lewis	81	whole	13.3	0.47
Hieracium paniculatum L.	New Minas, N.S.	10/8/42	R.M. Lewis	689	whole	12.3	0.07
Hieracium pilosella L.	Ottawa, Ont.	27/8/43	M.N. Zinck	1805	leaves	12.4	0.42
		27/8/43	M.N. Zinck	1810	leaves	11.0	0.37
		27/8/43	M.N. Zinck	1811	leaves	11.0	0.44
		27/8/43	M.N. Zinck	1812	leaves	12.6	0.29
		16/10/42	M.N. Zinck	1229	whole	7.4	0.21
	Kentville, N.S.	21/6/42	R.M. Lewis	78	whole	14.8	0.36
Hieracium pratense Tausch.	Ottawa, Ont.	23/6/42	H. Groh	48	whole	8.4	0.21
Hieracium scabrum Michx.	Ottawa, Ont.	27/8/43	M.N. Zinck	1818	leaves	18.9	0.34
	New Minas, N.S.	20/8/42	R.M. Lewis	697	whole	11.3	0.22
Hieracium villosum Jacq.	Ottawa, Ont.	27/8/43	M.N. Zinck	1804	leaves	17.4	0.31
Hieracium vulgatum Fries	Ottawa, Ont.	25/8/42	H. Groh, W.H. Minshall	671	whole	7.2	0.28
		27/8/43	M.N. Zinck	1815	leaves	9.9	0.46
	Ancienne Lorette, Que.	18/6/42	W.H. Minshall	32	whole	8.7	0.26
Humulus americanus Nutt.	Katepwa, Sask.	1/7/42	L.T. Carmichael	269	whole	9.1	0.42
	Birtle, Man.	7/7/42	M.G. Dudley	403	shoots	11.1	0.33
	Blomidon, N.S.	2/9/42	A.E. Roland	815	shoots	12.1	0.13
Humulus lupulus L.	Lakeville, N.B.	28/6/42	S.F. Clarkson, M.B. Moore, J.L. Howatt	862	shoots	3.4	0.07
Hypericum perforatum L.	Abbotsford, B.C.	4/8/42	Dom. Ent. Lab.	573	whole	12.4	0.06
Hypochaeris radicata L.	Abbotsford, B.C.	4/8/42	Dom. Ent. Lab.	575	whole	9.3	0.12

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
	Ottawa, Ont.	20/7/42	H. Groh	316	whole	8.5	0.38
Impatiens biflora L.	Cape Breton, N.S.	20/8/42	J.P. MacMillan	706	whole	4.0	0.26
Inula helenium L.	Ottawa, Ont.	5/8/42	H.A. Senn	471	leaves, flowers	10.5	0.76
				472	stems	6.7	0.10
Ipomoea pandurata C.F.W. Meyer	Morpeth, Ont.	30/7/42	C.C. Bell	490	shoots	10.1	0.23
Lactuca biennis (Moench) Fern.	Vancouver, B.C.	26/8/42	J. Davidson	177	whole	5.3	0.28
		?/8/42	N. Boldt	654	whole	6.9	0.25
	New Westminster, B.C.	?/9/42	W.L. Martin	887	leaves	10.7	0.48
				888	stems	6.5	0.09
				886	flower heads	14.1	0.63
		?/10/42	W.L. Martin	950	whole	4.9	0.04
	Harwich Twp., Ont.	22/8/42	C.C. Bell	769	shoots	9.3	0.24
	Ottawa, Ont.	8/9/43	M.N. Zinck	1836	leaves	8.9	0.42
		8/9/43	M.N. Zinck	1837	leaves	10.2	0.46
		13/9/43	M.N. Zinck	1850	leaves	10.4	0.46
	Lascelles, Que.	8/7/42	H. Groh	196	whole	11.2	0.34
	Brebeuf, Que.	3/8/42	L. Coupal	459	whole	10.0	0.34
	Centreville, N.S.	6/7/42	R.M. Lewis	249	whole	9.0	0.24
	Margaret'e Bay, N.S.	13/8/42	M.S. Brown	818	whole	8.7	0.14
		13/8/42	M.S. Brown	820	whole	8.5	0.20
Lactuca canadensis L.	Eastend, Sask.	?/7/42	H.S. Jones	284	whole	13.2	0.46
	Preston, Ont.	2/9/42	H. Groh	774	whole	7.6	0.30
	Ottawa, Ont.	26/8/43	M.N. Zinck	1803	leaves	11.2	0.22
		8/9/43	M.N. Zinck	1845A	leaves	9.8	0.38
				1845B	stems, flowers	6.8	0.16
	Fredericton, N.B.	29/6/42	M.B. Moore, S.F. Clarkson, J.L. Howatt	848	whole	5.2	0.12
Lactuca canadensis L. var. integrifolia (Bigel.) Gray	Howard Twp., Ont.	5/9/42	C.C. Bell	838	whole	7.1	0.11
Lactuca canadensis L. var. latifolia O. Kuntze	Kettle Point, Ont.	8/8/42	H. Millar	605	shoots	9.3	0.23
Lactuca canadensis L. var. typica Wieg.	Kettle Point, Ont.	8/8/42	H. Millar	604	shoots	8.8	0.28
	Harwich Twp., Ont.	22/8/42	C.C. Bell	766	shoots	11.4	0.09
	Kentville, N.S.	3/7/42	R.M. Lewis	245	shoots	11.3	0.30
Lactuca muralis L.	Ottawa, Ont.	5/8/42	H. Groh	480	whole	6.9	0.23
Lactuca pulchella (Pursh) DC.	Ft. Sask., Alta.	27/6/42	G.H. Turner	226	whole	12.6	0.59
	Macleod, Alta.	6/7/42	R.H. Dixon	307	whole	10.6	0.76
	Edmonton, Alta.	20/8/42	M.W. Cormack	723	whole	9.0	0.48
	Katepwa Beach, Sask.	1/7/42	L.T. Carmichael	274	whole	12.5	0.69
	Saskatoon, Sask.	25/7/42	R.C. Russell	525	shoots	10.7	0.70

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Lactuca pulchella (Pursh) DC. - Continued	Eastend, Sask.	30/7/42	R.A. Wilkinson	560	whole	12.0	0.55
		?/8/42	H.S. Jones	645	whole	10.8	0.66
	Floral, Sask.	18/9/42	R.C. Russell	1318	whole	9.5	0.17
	Morden, Man.	?/7/42	H.H. Marshall	757	whole	10.1	0.60
Lactuca sativa L.	Ottawa, Ont.	22/8/42	D. Miller	633	whole	9.3	0.36
		22/8/42	D. Miller	634	leaves	11.7	0.65
Lactuca sativa L. var. crispa L.	Ottawa, Ont.	22/8/42	D. Miller	635	whole	10.2	0.42
		22/8/42	D. Miller	636	leaves	12.6	0.64
				637	stems, flowers	15.0	0.53
Lactuca serriola L.	Oliver, B.C.	8/7/42	H.T. Güssow	319	whole	11.4	0.28
	Macleod, Alta.	?/6/42	R.H. Dixon	231	whole	9.6	0.22
	Lethbridge, Alta.	7/7/42	J.J. Sexsmith	382	shoots	8.5	0.31
	Eastend, Sask.	?/7/42	H.S. Jones	283	whole	11.5	0.43
		20/7/42	R.A. Wilkinson	558	whole	9.3	0.20
		?/8/42	H.S. Jones	639	whole	8.8	0.30
		?/8/42	H.S. Jones	653	whole	7.6	0.19
		?/9/42	H.S. Jones	1046	shoots	5.9	0.12
	Ottawa, Ont.	11/6/42	W.H. Minshall	29	whole	8.6	0.33
	Crediton, Ont.	15/7/42	L.O. Gaiser	434	whole	15.7	0.23
	Beamsville, Ont.	21/7/42	F. Ransom	589	shoots	13.6	0.22
	Morpeth, Ont.	1/8/42	C.C. Bell	492	shoots	9.9	0.26
Lactuca serriola L. forma integrifolia Bogenhard	Victoria, B.C.	30/7/42	A.E. Pickford	553	whole	12.5	0.06
	Lethbridge, Alta.	11/8/42	M.W. Cormack	722	whole	6.6	0.16
	Fort Sask., Alta.	14/7/42	G.H. Turner	376	whole	7.9	0.29
	Morden, Man.	?/6/42	H.H. Marshall	744	whole	10.1	0.16
		1/7/42	H.H. Marshall	736	whole	8.5	0.26
	Beamsville, Ont.	21/7/42	F. Ransom	583	whole	9.6	0.19
	Ottawa, Ont.	11/6/42	W.H. Minshall	30	whole	9.1	0.32
	Westboro, Ont.	14/8/42	H. Groh	565	whole	8.5	0.23
Laminaria sp.	Meisner's Island, N.S.	10/8/42	M.N. Zinck	564	whole	6.2	0.11
Lapsana communis L.	Vancouver, B.C.	26/6/42	J. Davidson	176	whole	8.2	0.17
	Ottawa, Ont.	5/8/42	H. Groh	481	whole	6.5	0.15
Lathyrus palustris L.	Constance Bay, Ont.	10/7/42	H.A. Senn, M.N. Zinck, D.C. McIntosh	216	shoots	11.2	0.56
Limonium carolinianum (Walt.) Britton	Bourgald's Pt., N.S.	12/7/42	M.N. Zinck	363	whole	4.6	0.21
Lobelia cardinalis L.	Shirley Bay, Ont.	7/8/42	H. Groh, E.G. Anderson	512	leaves	18.2	0.40
				511	stems, roots, flowers	11.2	0.19
	Harwich Twp., Ont.	22/8/42	C.C. Bell	768	whole	12.4	0.15
Lobelia inflata L.	Lascelles, Que.	7/7/42	H. Groh	278	whole	10.9	0.33

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
	Halls Harbour, N.S.	30/9/42	R.M. Lewis	1335	whole	12.5	0.30
Lobelia epicata Lam.	Lascelles, Que.	9/7/42	H. Groh	206	whole	11.8	0.28
Lobelia siphilitica L.	Howard Twp., Ont.	29/8/42	C.C. Bell	771	whole	10.1	0.20
Lonicera alpigena L.	Ottawa, Ont.	31/7/42	D.C. McIntosh	439	leaves, fruit	25.2	0.86
				440	woody stems	8.6	0.17
Lonicera amoena Zab.	Ottawa, Ont.	31/7/42	D.C. McIntosh	449	leaves, fruit	38.3	0.94
				450	woody stems	7.4	0.12
Lonicera iberica Bieb. var. microphylla Dipp.	Ottawa, Ont.	31/7/42	D.C. McIntosh	451	leaves, fruit	25.3	0.81
				452	woody stems	7.2	0.06
Lonicera prolifera (Kirchn.) Rebd.	Ottawa, Ont.	31/7/42	D.C. McIntosh	447	leaves, fruit	19.6	0.85
				448	woody stems	6.9	0.09
Lonicera Ruprechtiana Req.	Ottawa, Ont.	31/7/42	D.C. McIntosh	443	leaves, fruit	26.7	1.06
				444	woody stems	7.8	0.17
		31/7/42	D.C. McIntosh	445	leaves, fruit	30.0	1.33
				446	woody stems	10.1	0.21
		28/7/42	D.C. McIntosh	409	leaves, fruit	39.7	0.78
				410	woody stems	8.8	0.14
Lonicera tatarica L.	Ottawa, Ont.	28/7/42	D.C. McIntosh	405	leaves, fruit	40.5	1.07
				406	woody stems	9.4	0.09
	Ottawa, Ont.	28/7/42	D.C. McIntosh	407	leaves, fruit	42.4	1.05
				408	woody stems	10.3	0.09
		28/7/42	D.C. McIntosh	411	leaves, fruit	40.5	0.86
				412	woody stems	10.7	0.00
		28/7/42	D.C. McIntosh	413	leaves, fruit	47.6	0.66
				414	woody stems	10.6	0.00
		31/7/42	D.C. McIntosh	441	leaves, fruit	39.5	0.89
				442	woody stems	9.5	0.14
		31/7/42	D.C. McIntosh	453	leaves, fruit	25.8	1.18

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Lonicera tatarica L. - Continued				454	woody stems	7.6	0.10
Lygodesmia juncea (Pursh) D. Don	Craigmyle, Alta.	30/6/42	A.H. Brinkman	193	whole	13.0	0.33
	Pearce, Alta.	10/7/42	J.J. Sexsmith	381	whole	14.9	0.56
	Dundurn, Sask.	23/6/42	R.C. Russell	292	whole	18.7	0.40
	Eastend, Sask.	?/7/42	H.S. Jones	286	whole	14.6	0.47
		30/7/42	R.A. Wilkinson	562	whole	15.1	0.41
	Saskatoon, Sask.	25/8/42	R.C. Russell	872	whole	15.3	0.19
	Eastend, Sask.	?/8/42	H.S. Jones	641	whole	13.0	0.59
Lysimachia nummularia L.	Shirley Bay, Ont.	7/8/42	H. Groh E.G. Anderson	516	whole	11.4	0.13
Malva moschata L.	Ottawa, Ont.	29/6/42	D.C. McIntosh	86	leaves, flowers	6.2	0.35
Maclura microcarpa Fidde	Ottawa, Ont.	7/7/42	H.A. Senn, D.C. McIntosh	169	stems, leaves, flowers	16.5	0.13
Maclura pomifera (Raf.) Schneider	Kent Co., Ont.	19/10/42	C.C. Bell	1304	leaves, stems	10.3	0.18
				1305	leaves	12.7	0.21
				1297	fruit	3.2	0.24
Melilotus alba Desr.	Britannia Bay, Ont.	29/7/42	H.A. Senn, M.N. Zinck	431	shoots	10.3	0.15
Mentha arvensis L. var. lanata Piper	Fort Frances, Ont.		A. Cramg	711	whole	2.5	0.22
Morus rubra L.	Beamsville, Ont.	1/10/42	P. Ransom	1040	leaves	12.0	0.31
				1039	woody stems	6.6	0.19
Morus alba L.	Ottawa, Ont.	11/6/42	H. Groh	20	leaves, stems	8.6	0.39
	Rondeau Park, Ont.	17/8/42	C.C. Bell	630	leaves, stems	9.2	0.25
	Beamsville, Ont.	1/10/42	F. Ransom	1042	leaves	7.8	0.38
				1041	woody stems	7.3	0.12
	Kent Co., Ont.	18/10/42	C.C. Bell	1303	leaves, stems	8.6	0.29
Nelumbo pentapetala (Walt.) Fern.	Kent Co., Ont.	22/9/42	C.C. Bell	883	leaves	11.2	0.07
				884	stems	6.3	0.05
				885	seed heads	14.4	0.07
Nepeta hederacea (L.) Trev.	Westboro, Ont.	16/9/42	H. Groh	826A	whole	3.5	0.14
Nostoc sp.	Ansonville, Ont.	12/8/42	P. Pelletier	567	whole	2.4	0.17
Oenothera glauca Michx. var. Fraseri Torr. & Gray	Ottawa, Ont.	29/6/42	D.C. McIntosh	93	shoots	17.9	0.28
Oenothera cymatilis Bart.	Ottawa, Ont.	4/8/42	Dom. Ent. Lab.	577	whole	7.1	0.04
	Cape Breton, N.S.	20/8/42	J.P. MacMillan	701	whole	7.4	0.24
	Lun. Co., N.S.	12/7/42	M.N. Zinck	365	whole	6.1	0.09
Pachysandra terminalis Sieb. & Zucc.	Ottawa, Ont.	7/7/42	H.A. Senn, D.C. McIntosh	159	whole	14.9	0.53

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analysed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Parthenium argentatum Gray	Saanichton, B.C.	3/12/42	J.J. Woode	1383	stems, leaves, flowers	8.5	0.64
				1384	leaves	9.1	0.41
				1385	stems	6.3	1.40
				1386	roots	4.9	0.72
Penstemon diffusus Dougl.	Ottawa, Ont.	29/6/42	D.C. McIntosh	97	shoots	18.8	0.11
Perilla frutescens Britt. var. crispa Deane	Ottawa, Ont.	1/10/42	M.N. Zinck	938	shoots	5.7	0.15
Pimpinella anisum L.	Ottawa, Ont.	1/10/42	M.N. Zinck	1062	whole	10.4	0.18
Plantago juncoides Lam. var. decipiens (Barneoud) Fern.	Halifax Co., N.S.	13/8/42	M.S. Brown	821	whole	7.4	0.16
Plantago major L.	Fort Frances, Ont.	?/8/42	A. Cramg	712	whole	7.7	0.33
Plantago psyllium L.	Ottawa, Ont.	1/10/42	M.N. Zinck	1058	whole	9.3	0.17
Polemonium caeruleum L.	Ottawa, Ont.	29/6/42	D.C. McIntosh	87	shoots	13.8	0.29
Polygonum convolvulus L.	Ottawa, Ont.	23/6/42	H.A. Senn	54	whole	12.4	0.11
Potentilla fruticosa L. var. pyrenaica Willd.	Ottawa, Ont.	29/6/42	D.C. McIntosh	92	shoots	10.7	0.09
Potentilla recta L. var. obscura Koch	Preston, Ont.	2/9/42	H. Groh	780	whole	13.6	0.13
Prenanthes alba L.	Kent Co., Ont.	17/8/42	C.C. Bell	772	shoots	8.5	0.15
	Crediton, Ont.	1/9/42	L.O. Gaiser	792	whole	11.6	0.28
Prenanthes altissima L.	Ottawa, Ont.	25/8/42	W.H. Minshall, H. Groh	674	whole	9.7	0.28
	Crediton, Ont.	1/9/42	L.O. Gaiser	824	whole	9.6	0.39
	Kent Co., Ont.	14/9/42	C.C. Bell	1306	shoots	8.3	0.27
	Kentville, N.S.	3/7/42	R.M. Lewis	243	shoots	10.1	0.26
		11/9/42	R.M. Lewis	1325	whole	9.0	0.14
Pteridium aquilinum L. Kuhn. var. latisculum (Desv.) Underw.	Laurentian View, Ont.	25/9/42	H. Groh	889	whole	8.3	0.16
Rhamnus cathartica L.	Ottawa, Ont.	2/7/42	D.C. McIntosh	147	leaves	16.6	0.28
				148	woody stems	9.1	0.04
Rhus aromatica Ait.	Carleton Co., Ont.	10/7/42	H.A. Senn, M.N. Zinck, D.C. McIntosh	213	leaves, stems, fruits	18.9	0.14
	Kent Co., Ont.	30/7/42	C.C. Bell	497	leaves, stems	25.4	0.15
	Ottawa, Ont.	2/7/42	D.C. McIntosh	143	leaves	26.3	0.13
				144	woody stems	9.4	0.06
		2/7/42	D.C. McIntosh	145	leaves	29.0	0.09
				146	woody stems	11.0	0.05
	Valretreau, Que.	26/6/42	H. Groh	72	leaves, stems	27.2	0.09
Rhus glabra L.	Vancouver, B.C.	23/6/42	J. Davidson	186	leaves, flowers	38.4	0.19
				185	woody stems	17.6	0.08

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Rhus glabra L. - Continued	Morden, Man.	26/6/42	H.H. Marshall	747	whole	12.6	0.26
				748	leaves	19.3	0.33
Rhus radicans L.	Rondeau Park, Ont.	18/8/42	C.C. Bell	765	whole	16.3	0.12
Rhus radicans L. var. Rydbergii (Small) Rehd.	Vancouver, B.C.	23/6/42	J. Davidson	184	leaves, flowers	16.7	0.24
				183	woody stems	12.7	0.09
Rhus trilobata Nutt.	Saskatoon, Sask.	1/9/42	B.J. Sallans, R.J. Ledingham	881	leaves	22.2	0.07
				880	woody stems	11.2	0.06
Rhus typhina L.	Beamsville, Ont.	7/7/42	F. Ransom	592	leaves, stems, flowers	33.4	0.19
	Rondeau Park, Ont.	8/8/42	C.C. Bell	611	leaves, stems, flowers	31.5	0.28
	Ottawa, Ont.	3/6/42	H. Groh	3	leaves, stems	33.7	0.21
		10/6/42	H. Groh	15	stems, leaves	33.7	0.17
		11/8/42	H. Groh	541	leaves	44.8	0.17
				542	stems	16.3	0.01
		9/9/43	M.N. Zinck	1858	leaves	34.9	0.20
	Fredericton, N.B.	29/6/42	S.F. Clarkson, J.L. Howatt	849	stems, leaves	18.1	0.16
	New Minas, N.S.	3/7/42	R.M. Lewis	241	leaves, stems	30.2	0.12
Rorippa sylvestris (L.) Bess.	Ottawa, Ont.	18/7/42	H. Groh	303	whole	7.0	0.28
Rudbeckia hirta L.	Laurentian View, Ont.	25/6/42	E.G. Anderson	68	whole	7.4	0.24
Sagittaria latifolia Willd.	Terrebonne, Que.	3/8/42	L. Coupal	458	whole	11.7	0.09
Sambucus canadensis L.	Farmer Rapids, Que.	26/6/42	H. Groh	74	leaves, stems, flowers	14.4	0.36
	Annapolis Co., N.S.	21/8/42	R.M. Lewis	700	stems, leaves	13.1	0.62
Sambucus pubens Michx.	New Minas, N.S.	28/8/42	R.M. Lewis	814	leaves, stems	17.3	0.19
Sanguinaria canadensis L.	Beamsville, Ont.	11/7/42	F. Ransom	588	whole	11.3	0.19
Saponaria officinalis L.	Ottawa, Ont.	20/8/42	H. Groh	602	whole	13.4	0.12
Sarcobatus vermiculatus Torr.	Swift Current, Sask.	18/7/42	Dom. Expt. Sta.	298	woody stems	3.1	0.07
Scabiosa atropurpurea L.	Ottawa, Ont.	1/7/42	H.A. Senn, D.C. McIntosh	133	shoots	13.9	0.19
Scutellaria alpina L.	Ottawa, Ont.	29/6/42	D.C. McIntosh	103	shoots	7.9	0.40
Sedum telephium L.	Ottawa, Ont.	23/6/42	H.A. Senn	56	whole	15.9	0.14
Senecio canus Hook.	Birtle, Man.	7/7/42	M.G. Dudley	400	whole	16.2	0.26
Senecio vulgaris L.	Ottawa, Ont.	24/6/42	H. Groh	51	whole	9.3	0.66
		20/8/42	H. Groh	600	whole	10.3	0.36
Smilax herbacea L.	Ottawa, Ont.	29/7/42	H.A. Senn, M.N. Zinck	429	leaves, stems	17.0	0.41

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
				430	green fruit	13.5	0.17
Solanum dulcamara L.	Ottawa, Ont.	20/7/42	H. Groh	315	whole	10.8	0.23
Solidago altissima L.	Howard Twp., Ont.	5/9/42	C.C. Bell	839	whole	12.8	0.42
	Preston, Ont.	2/9/42	H. Groh	777	whole	9.0	0.54
	Beamsville, Ont.	13/9/42	F. Ransom	1038	shoots	11.6	0.53
	Milford Bay, Ont.	28/6/42	W.H. Minshall	111	whole	8.0	0.22
	Ottawa, Ont.	3/6/42	H. Groh	5	leaves	11.8	0.10
				5A	stems	6.8	0.00
	Ottawa, Ont.	6/6/42	H.A. Senn	9	whole	7.9	0.28
	Ottawa, Ont.	11/6/42	H. Groh	24	leaves	9.9	0.10
				24A	stems	4.3	0.07
				24B	roots	9.3	0.01
		20/6/42	T. Adams	39	shoots	9.2	0.38
	Ottawa, Ont.(39-114-177-1)	22/6/43	M.N. Zinck	1560A	leaves	8.6	0.42
				1560B	stems	21.6	0.65
	Ottawa, Ont.	25/6/42	H. Groh	67	leaves	10.4	0.20
				67A	stems	4.1	0.09
				67B	roots	8.4	0.05
	Ottawa, Ont.(39-114-177-1)	7/7/43	M.N. Zinck	1563A	leaves	9.5	0.35
				1563B	stems	4.2	0.13
	Ottawa, Ont.	15/7/42	H. Groh, E.G. Anderson	260	stems	4.6	0.05
				261	roots	7.7	0.20
				259	leaves	12.7	0.20
	Ottawa, Ont.(39-114-177-1)	22/7/43	M. Sutton	1587A	leaves	8.6	0.68
				1587B	stems	3.0	0.25
	Ottawa, Ont.	29/7/42	H.A. Senn, M.N. Zinck	422	leaves, flowers	14.5	0.70
				423	stems	3.6	0.01
	Ottawa, Ont.(39-114-177-1)	5/8/43	M.N. Zinck	1607A	leaves	10.2	1.20
				1607B	stems	2.5	0.26
	Ottawa, Ont.(39-92-194)	10/8/43	M. Sutton	1626	leaves	14.1	0.39
	Ottawa, Ont.(39-114-117-3)	10/8/43	M. Sutton	1628	leaves	11.1	1.10
	Ottawa, Ont.(40-41-141-4)	10/8/43	M. Sutton	1630	leaves	11.1	0.85
	Ottawa, Ont.(39-114-177-1)	11/8/43	M.N. Zinck	1652A	leaves	10.5	1.00
				1652B	stems	2.7	0.23
	Ottawa, Ont.	11/8/42	H. Groh	543	leaves	13.8	0.40
				544	stems	4.6	0.09
				544A	roots	9.8	0.05
	Ottawa, Ont.(X-2-43)	12/8/43	M. Sutton	1656	leaves	12.4	1.10
	Ottawa, Ont.(X-2-44)	12/8/43	M. Sutton	1657	leaves	13.1	1.10

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analysed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Solidago altissima L. - Continued	Ottawa, Ont.(X-2-60)	12/8/43	M. Sutton	1668	leaves	10.9	1.30
	Ottawa, Ont.(X-2-68)	13/8/43	M. Sutton	1691	leaves	12.5	1.00
	Ottawa, Ont.(X-2-70)	13/8/43	M. Sutton	1692	leaves	12.3	1.60
	Ottawa, Ont.(X-2-91)	14/8/43	M. Sutton	1713	leaves	17.6	0.86
	Ottawa, Ont.(39-114-177-1)	18/8/43	M.N. Zinck	1728A	leaves	10.3	1.20
				1728B	stems	2.4	0.18
	Ottawa, Ont.(40-41-141-2)	20/8/43	M.N. Zinck	1764	leaves	11.6	0.86
	Ottawa, Ont.	26/8/42	H. Groh	666	leaves	14.0	0.60
				667	stems	6.6	0.09
				667A	roots	10.3	0.07
	Ottawa, Ont.(39-114-177-1)	27/8/43	M.N. Zinck	1823A	leaves	10.8	1.20
				1823B	stems	2.3	0.16
	Ottawa, Ont.(39-114-177-1)	2/9/43	M.N. Zinck	1831A	leaves	10.8	1.20
				1831B	stems	2.3	0.27
	Ottawa, Ont.(39-114-177-1)	9/9/43	M.N. Zinck	1848A	leaves	11.4	0.95
	Ottawa, Ont.	11/9/42	H. Groh	805	leaves	14.7	0.50
				806	stems	5.3	0.08
				806A	roots	10.7	0.05
	Ottawa, Ont.(39-114-177-1)	16/9/43	M.N. Zinck	1883A	leaves, flowers	8.4	0.63
				1883B	stems	2.7	0.15
		22/9/43	M.N. Zinck	1898A	leaves	12.2	0.85
				1898B	stems	3.4	0.04
	Ottawa, Ont.	25/9/42	H. Groh	890	stems, flowers, roots	6.2	0.16
				891	leaves	14.6	1.18
	Ottawa, Ont.(39-114-177-1)	7/10/43	M.N. Zinck	1914A	leaves	13.6	1.20
				1914B	stems	4.0	0.18
	Ottawa, Ont.(X-2-68)	15/10/42	M.N. Zinck	1110	leaves	8.4	0.65
				1109	stems	3.6	0.07
	Ottawa, Ont.(40-41-141-4)	16/10/42	M.N. Zinck	1100	leaves	6.9	0.67
				1099	stems, flowers	4.2	0.05
	Ottawa, Ont.(39-116-269)	16/10/42	M.N. Zinck	1096	leaves	7.8	0.63
				1095	stems	4.4	0.08
	Ottawa, Ont.(X-2-60)	16/10/42	M.N. Zinck	1197	leaves	9.1	1.26
				1198	stems, flowers	8.7	0.19
	Ottawa, Ont.(X-2-43)	16/10/42	M.N. Zinck	1174	leaves	12.5	1.37
				1175	stems, flowers	5.8	0.15
	Ottawa, Ont.(X-2-70)	16/10/42	M.N. Zinck	1123	leaves	8.0	1.35

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
				1124	stems, flowers	7.5	0.08
	Ottawa, Ont.(39-114-177-3)	16/10/42	M.N. Zinck	1069	leaves, flowers	11.6	0.51
				1068	stems	4.1	0.02
Solidago bicolor L.	New Minas, N.S.	14/8/42	R.M. Lewis	692	whole	11.1	0.17
	Ingonish, N.S.	20/8/42	J.P. MacMillan	705	whole	7.7	0.25
Solidago caesia L.	Preston, Ont.	2/9/42	H. Groh	779	whole	6.3	0.33
	Beamsville, Ont.	13/9/42	F. Ransom	1036	whole	7.3	0.29
	Kent Co., Ont.	28/8/42	C.C. Bell	767	shoots	8.4	0.37
	Ottawa, Ont.(39-114-145-4)	10/8/43	M. Sutton	1633	leaves	20.6	1.20
Solidago canadensis L.	Ottawa, Ont.	3/6/42	H. Groh	6	whole	10.3	0.26
	Ottawa, Ont.	27/7/42	H. Groh	386	leaves, flowers	15.0	0.85
				387	stems	5.2	0.10
	Ottawa, Ont.	29/7/42	H.A. Senn, M.N. Zinck	424	leaves	17.5	0.66
				425	stems, flowers	7.9	0.11
	Harwich Twp., Ont.	4/8/42	C.C. Bell	612	whole	10.2	0.41
	Rondeau Park, Ont.	7/8/42	C.C. Bell	618	whole	13.8	0.27
	Brantford, Ont.	?/8/42	F. Luck	732	shoots	7.3	0.56
	Ottawa, Ont.	5/8/42	H.A. Senn	475	leaves	16.0	1.42
				476	stems, flowers	7.8	0.13
	Ottawa, Ont.(39-16-62)	10/8/43	M. Sutton	1634	leaves	17.6	1.00
	Ottawa, Ont.(X-2-56)	12/8/43	M. Sutton	1655	leaves	16.7	1.10
	Ottawa, Ont.(X-2-47)	12/8/43	M. Sutton	1660	leaves	17.2	0.99
	Ottawa, Ont.(X-2-80)	12/8/43	M. Sutton	1661	leaves	11.5	1.50
	Ottawa, Ont.(X-2-64)	12/8/43	M. Sutton	1665	leaves	15.4	1.30
	Ottawa, Ont.(X-2-51)	12/8/43	M. Sutton	1667	leaves	16.7	1.60
	Ottawa, Ont.(X-2-764)	12/8/43	M. Sutton	1669	leaves	12.0	0.92
	Ottawa, Ont.(X-2-53)	12/8/43	M. Sutton	1671	leaves	15.7	1.10
	Ottawa, Ont.(X-2-806)	12/8/43	M. Sutton	1672	leaves	13.6	1.30
	Ottawa, Ont.(X-2-54)	13/8/43	M. Sutton	1680	leaves	16.2	0.85
	Ottawa, Ont.(X-2-626)	13/8/43	M. Sutton	1683	leaves	17.2	1.10
	Ottawa, Ont.(X-2-52)	13/8/43	M. Sutton	1685	leaves	16.2	0.93
	Ottawa, Ont.(X-2-71)	13/8/43	M. Sutton	1693	leaves	13.2	1.50
	Ottawa, Ont.(X-2-51)	13/8/43	M. Sutton	1695	leaves	15.3	1.10
	Ottawa, Ont.(X-2-74)	13/8/43	M. Sutton	1700	leaves	13.1	1.80
	Ottawa, Ont.(X-2-801)	14/8/43	M. Sutton	1716	leaves	20.6	1.20
	Ottawa, Ont.(X-2-48)	14/8/43	M. Sutton	1709	leaves	17.8	1.90
	Ottawa, Ont.(X-2-87)	14/8/43	M. Sutton	1711	leaves	17.3	1.30
	Ottawa, Ont.(39-140-91-1)	23/8/43	M.N. Zinck	1790	leaves	15.9	1.10

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Solidago canadensis L. - Continued	Ottawa, Ont.(39-41-55-1)	23/8/43	M.N. Zinck	1787	leaves	14.7	1.20
	Ottawa, Ont.	14/9/43	M.N. Zinck	1860	leaves, flowers	15.3	1.30
	Ottawa, Ont.(X-2-801)	16/10/42	M.N. Zinck	1105	stems, flowers	7.2	0.04
				1106	leaves	8.8	0.93
	Ottawa, Ont.(X-2-626)	16/10/42	M.N. Zinck	1128	leaves	8.0	0.98
				1129	stems, flowers	4.3	0.01
	Ottawa, Ont.(X-2-80)	16/10/42	M.N. Zinck	1149	leaves	7.5	1.33
				1150	stems, flowers	9.1	0.12
	Ottawa, Ont.(X-2-53)	16/10/42	M.N. Zinck	1151	leaves	8.9	2.04
				1152	stems, flowers	4.4	0.09
	Ottawa, Ont.(X-2-764)	16/10/42	M.N. Zinck	1158	leaves	9.9	1.24
				1159	stems, flowers	6.3	0.07
	Ottawa, Ont.(X-2-806)	16/10/42	M.N. Zinck	1160	leaves	7.2	0.73
				1161	stems, flowers	4.3	0.15
	Ottawa, Ont.(X-2-47)	16/10/42	M.N. Zinck	1172	leaves	9.3	1.99
				1173	stems, flowers	5.1	0.13
	Ottawa, Ont.(X-2-51)	16/10/42	M.N. Zinck	1176	leaves	9.7	1.30
				1177	stems, flowers	7.0	0.19
	Ottawa, Ont.(X-2-56)	16/10/42	M.N. Zinck	1178	leaves	8.4	1.17
				1179	stems, flowers	7.5	0.16
	Ottawa, Ont.(X-2-74)	16/10/42	M.N. Zinck	1180	leaves	8.6	2.29
				1181	stems, flowers	7.0	0.15
	Ottawa, Ont.(X-2-54)	16/10/42	M.N. Zinck	1189	leaves	10.1	1.13
				1190	stems, flowers	4.9	0.14
	Ottawa, Ont.(X-2-71)	16/10/42	M.N. Zinck	1195	leaves	7.6	1.75
				1196	stems, flowers	6.0	0.19
	Ottawa, Ont.(X-2-87)	16/10/42	M.N. Zinck	1217	leaves	6.3	0.60
				1218	stems, flowers	3.5	0.10
	Ottawa, Ont.(X-2-52)	16/10/42	M.N. Zinck	1238	leaves	8.9	1.63
				1239	stems, flowers	4.9	0.10
	New Minas, N.S.	15/8/42	R.M. Lewis	695	whole	8.1	0.25
Solidago canadensis L. var. gilvocanescens Rydb.	Craigmyle, Alta.	5/8/42	A.H. Brinkman	520	whole	10.8	0.16
	Winnipeg, Man.	?/8/42	A. Simpson	655	whole	12.1	0.20

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Solidago corymbosa Ell.	Ottawa, Ont.	9/10/42	M.N. Zinck	1016	leaves, flowers	12.1	0.74
				1015	stems	4.7	0.08
Solidago decumbens Greene var. orecphila (Rydb.) Fern.	Fort Sask., Alta.	12/7/42	G.H. Turner	310	whole	8.6	0.24
		26/7/42	G.H. Turner	470	whole	11.9	0.25
	Sutherland, Sask.	25/8/42	R.C. Russell	874	whole	13.4	0.26
		18/9/42	R.C. Russell	1319	whole	10.7	0.19
Solidago dumetorum Lunell	Floral, Sask.	23/6/42	R.C. Russell	293	whole	9.3	0.08
		7/8/42	R.C. Russell	682	whole	9.7	0.26
	Saskatoon, Sask.	25/8/42	R.C. Russell	875	whole	9.8	0.29
	Floral, Sask.	25/8/42	R.C. Russell	873	whole	10.7	0.36
	Eastend, Sask.	?/8/42	H.S. Jones	714	whole	10.8	0.35
	Valley Centre, Sask.	1/9/42	B.J. Sallans, R.J. Ledingham	876	whole	9.0	0.33
	Saskatoon, Sask.	8/9/42	R.C. Russell	1321	whole	10.5	0.14
	Floral, Sask.	18/9/42	R.C. Russell	1322	whole	9.8	0.21
Solidago gigantea Ait.	Macleod, Alta.	6/7/42	R.H. Dixon	306	whole	6.8	0.17
	Rondeau Park, Ont.	8/8/42	C.C. Ball	614	whole	11.5	0.68
	Ottawa, Ont.(39-79-263)	7/8/43	M. Sutton	1621	leaves	17.6	1.30
	Ottawa, Ont.(X-2-815)	11/8/43	M. Sutton	1636	leaves	16.4	1.00
	Ottawa, Ont.(X-2-803)	13/8/43	M. Sutton	1674	leaves	12.8	1.10
	Ottawa, Ont.(X-2-90)	13/8/43	M. Sutton	1679	leaves	13.8	1.20
	Ottawa, Ont.(X-2-76)	13/8/43	M. Sutton	1688	leaves	18.3	1.10
	Ottawa, Ont.(X-2-92)	14/8/43	M. Sutton	1723	leaves	14.1	1.50
	Ottawa, Ont.(X-2-90)	16/10/42	M.N. Zinck	1133	stems, flowers	5.2	0.12
				1132	leaves	7.8	0.78
	Ottawa, Ont.(X-2-92)	16/10/42	M.N. Zinck	1219	leaves	6.4	0.50
				1220	stems, flowers	3.6	0.15
	New Minas, N.S.	20/8/42	R.M. Lewis	696	whole	10.5	0.33
Solidago gigantea Ait. var. leiophylla Fern.	Fort Sask., Alta.	29/6/42	G.H. Turner	253	leaves	16.1	0.39
				252	stems	9.1	0.18
	Eastend, Sask.	?/8/42	H.S. Jones	1048	whole	9.1	0.55
				650	whole	8.6	0.37
				713	whole	7.8	0.26
	Moose Jaw, Sask.	29/8/42	B.J. Sallans, R.C. Russell	877	whole	7.5	0.34
	Ottawa, Ont.(39-100-220)	5/8/43	M. Sutton	1608	leaves	16.6	1.10
	Ottawa, Ont.(39-16-41)	7/8/43	M. Sutton	1617	leaves	17.1	1.40
	Ottawa, Ont.(39-106-143)	10/8/43	M. Sutton	1627	leaves	16.4	1.40
	Ottawa, Ont.(39-16-65)	10/8/43	M. Sutton	1624	leaves	16.9	1.10

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Solidago gigantea Ait. var. leiophylla Fern. - Continued	Ottawa, Ont.(X-2-34)	11/8/43	M. Sutton	1645	leaves	15.4	1.20
	Ottawa, Ont.(X-2-45)	12/8/43	M. Sutton	1662	leaves	16.1	1.50
	Ottawa, Ont.(X-2-65)	13/8/43	M. Sutton	1698	leaves	15.3	1.60
	Ottawa, Ont.(X-2-83)	13/8/43	M. Sutton	1690	leaves	10.8	1.20
	Ottawa, Ont.(X-2-69)	14/8/43	M. Sutton	1704	leaves	16.0	1.60
	Ottawa, Ont.(X-2-79)	14/8/43	M. Sutton	1715	leaves	15.6	1.50
	Ottawa, Ont.(X-2-86)	14/8/43	M. Sutton	1705	leaves	14.7	1.10
	Ottawa, Ont.(X-2-62-B)	20/8/43	M.N. Zinck	1765	leaves	15.9	1.00
	Ottawa, Ont.(X-2-69)	21/8/43	M.N. Zinck	1767	leaves	13.2	1.30
	Ottawa, Ont.(39-100-220)	9/10/42	M.N. Zinck	1032	leaves, flowers	9.4	0.87
				1031	stems	3.4	0.10
	Ottawa, Ont.(39-16-44)	9/10/42	M.N. Zinck	1018	leaves, flowers	11.0	0.79
				1017	stems	3.8	0.07
	Ottawa, Ont.(39-16-41)	9/10/42	M.N. Zinck	1012	leaves, flowers	11.2	0.65
				1011	stems	5.0	0.16
	Ottawa, Ont.(X-2-62)	16/10/42	M.N. Zinck	1098	leaves	11.6	1.55
				1097	stems, flowers	4.5	0.14
	Ottawa, Ont.(X-2-65)	16/10/42	M.N. Zinck	1137	leaves	10.3	0.84
				1138	stems, flowers	4.3	0.12
	Ottawa, Ont.(X-2-83)	16/10/42	M.N. Zinck	1119	leaves	7.7	1.34
				1120	stems, flowers	3.6	0.16
	Ottawa, Ont.(X-2-86)	16/10/42	M.N. Zinck	1215	leaves	6.5	0.60
				1216	stems	3.7	0.11
	Ottawa, Ont.(X-2-69)	16/10/42	M.N. Zinck	1236	leaves	6.3	1.44
				1237	stems, flowers	5.5	0.15
	Ottawa, Ont.(X-2-79)	16/10/42	M.N. Zinck	1207	leaves	7.7	1.60
				1208	stems	5.5	0.16
	Ottawa, Ont.(X-2-34)	16/10/42	M.N. Zinck	1193	leaves	8.6	1.27
				1194	stems	5.3	0.35
	Ottawa, Ont.(X-2-45)	16/10/42	M.N. Zinck	1182	leaves	7.5	1.15
				1183	stems, flowers	6.1	0.19
	Ottawa, Ont.(X-2-45)	16/10/42	M.N. Zinck	1168	leaves	7.8	0.81
				1169	stems, flowers	6.0	0.28
	Ottawa, Ont.(39-16-65)	16/10/42	M.N. Zinck	1075	leaves	11.1	0.75
				1074	stems, flowers	3.9	0.23
	Ottawa, Ont.(X-2-820)	15/10/42	M.N. Zinck	1071	leaves, flowers	10.1	0.74

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract % dry wt.	Benzene extract % dry wt.
				1070	stems	3.3	0.13
Solidago glaberrima Martens	Birtle, Man.	7/7/42	M.G. Dudley	402	whole	14.3	0.16
	Saskatoon, Sask.	13/7/42	R.C. Russell	523	whole	15.4	0.28
	Craigmyle, Alta.	5/8/42	A.H. Brinkman	519	whole	14.8	0.16
	Ottawa, Ont.(X-2-66)	12/8/43	M. Sutton	1666	leaves	15.5	1.10
	Ottawa, Ont.(X-2-222)	13/8/43	M. Sutton	1676	leaves	17.8	1.00
	Ottawa, Ont.(X-2-221)	14/8/43	M. Sutton	1710	leaves	16.3	1.40
	Ottawa, Ont.(X-2-66)	16/10/42	M.N. Zinck	1199	leaves	11.5	1.58
				1200	stems, flowers	6.4	0.16
	Ottawa, Ont.(X-2-222)	16/10/42	M.N. Zinck	1201	leaves	11.3	0.73
				1202	stems, flowers	6.6	0.19
	Ottawa, Ont.(X-2-221)	16/10/42	M.N. Zinck	1108	leaves	12.8	1.22
				1107	stems, flowers	7.2	0.14
	Ottawa, Ont.(39-16-57)	7/8/43	M. Sutton	1619	leaves	16.3	0.51
	Ottawa, Ont.(39-16-45)	10/8/43	M. Sutton	1629	leaves	19.3	1.80
Solidago graminifolia (L.) Salisb.	Harwich Twp., Ont.	26/8/42	C.C. Bell	770	shoots	8.6	0.14
	Beamsville, Ont.	3/9/42	F. Ransom	1035	shoots	9.2	0.37
	Crediton, Ont.	?/9/42	L.O. Gaiser	825	whole	8.9	0.33
	Ottawa, Ont.	9/10/42	M.N. Zinck	1022	leaves, flowers	11.6	0.16
				1021	stems	3.0	0.05
	Porter Point, N.S.	13/8/42	R.M. Lewis	691	whole	8.2	0.24
Solidago graminifolia (L.) Salisb. var. camporum (Greene) Fern.	Fort Sask., Alta.	29/6/42	G.H. Turner	255	leaves	12.6	0.26
				254	stems	6.9	0.10
	Ottawa, Ont.(X-2-72)	5/8/43	M. Sutton	1609	leaves	14.2	0.69
	Ottawa, Ont.(X-2-38)	11/8/43	M. Sutton	1647	leaves	16.1	0.97
	Ottawa, Ont.(X-2-41)	12/8/43	M. Sutton	1664	leaves	15.8	0.95
	Ottawa, Ont.(X-2-39)	21/8/43	M.N. Zinck	1766	leaves	16.5	0.63
	Ottawa, Ont.(X-2-72)	9/10/42	M.N. Zinck	1020	leaves, flowers	13.4	0.53
				1019	stems	3.5	0.10
	Ottawa, Ont.(X-2-41)	16/10/42	M.N. Zinck	1147	leaves	10.0	1.57
				1148	stems, flowers	8.2	0.16
	Ottawa, Ont.(X-2-39)	16/10/42	M.N. Zinck	1170	leaves	9.5	1.46
				1171	stems	9.3	0.13
	Ottawa, Ont.(X-2-38)	16/10/42	M.N. Zinck	1164	leaves	8.4	0.84
				1165	stems, flowers	9.0	0.13
	Ottawa, Ont.(X-2-49)	16/10/42	M.N. Zinck	1117	leaves	9.0	1.26
				1118	stems, flowers	6.6	0.14

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Solidago graminifolia (L.) Salisb. var. nuttallii (Greene) Fern.	Ottawa, Ont.(X-2-822)	5/8/43	M. Sutton	1611	leaves	19.8	0.83
	Ottawa, Ont.(X-2-62)	11/8/43	M. Sutton	1639	leaves	17.8	1.00
	Ottawa, Ont.(X-2-55)	12/8/43	M. Sutton	1663	leaves	16.6	0.64
	Ottawa, Ont.(X-2-55)	21/8/43	M.N. Zinck	1778	leaves	16.4	0.95
	Ottawa, Ont.(X-2-55)	16/10/42	M.N. Zinck	1187	leaves	8.1	1.83
				1188	stems, flowers	7.5	0.14
Solidago hispida Muhl.	Crediton, Ont.	?/9/42	L.O. Gaiser	799	whole	7.8	0.50
	Ottawa, Ont.(39-41-55)	11/8/43	M. Sutton	1650	leaves	19.7	1.50
Solidago juncea Ait.	Carleton Co., Ont.	10/7/42	H.A. Senn, M.N. Zinck, D.C. McIntosh	214	whole	12.9	0.25
	Ottawa, Ont.	25/8/42	H. Groh, W.H. Minshall	670	whole	13.5	0.43
	Crediton, Ont.	?/9/42	L.O. Gaiser	797	whole	10.7	0.41
	New Minas, N.S.	28/8/42	R.M. Lewis	811	whole	12.6	0.15
Solidago latifolia L.	Kent Co., Ont.	1/9/42	C.C. Bell	834	whole	6.2	0.44
				835	leaves	9.3	0.92
	Beamsville, Ont.	13/9/42	F. Ransom	1037	whole	5.7	0.22
	Ottawa, Ont.	?/10/42	H. Groh	1309	whole	6.9	0.31
	Kentville, N.S.	20/8/42	R.M. Lewis	698	whole	9.1	0.19
Solidago lepida DC.	Abbotsford, B.C.	?/7/42	Dom. Ent. Lab.	576	whole	9.9	0.16
	Edmonton, Alta.	20/8/42	M.W. Cormack	721	whole	7.8	0.38
	Ottawa, Ont.(39-79-261-A)	10/8/43	M. Sutton	1631	leaves	17.5	0.90
	Ottawa, Ont.(X-2-804)	13/8/43	M. Sutton	1677	leaves	19.7	1.20
	Ottawa, Ont.(X-2-809)	14/8/43	M. Sutton	1703	leaves	19.5	0.95
	Ottawa, Ont.(X-2-796)	14/8/43	M. Sutton	1717	leaves	17.9	0.58
	Ottawa, Ont.(X-2-804)	16/10/42	M.N. Zinck	1191	leaves	8.8	0.79
				1192	stems, flowers	6.5	0.18
	Ottawa, Ont.(X-2-809)	16/10/42	M.N. Zinck	1114	leaves	10.5	0.89
				1113	stems, flowers	8.0	0.03
	Ottawa, Ont.(X-2-796)	16/10/42	M.N. Zinck	1213	leaves	10.2	0.65
				1214	stems, flowers	7.8	0.17
	Ottawa, Ont.(39-79-261-A)	15/10/42	M.N. Zinck	1073	leaves	11.1	0.60
				1072	stems, flowers	4.5	0.08
	Ottawa, Ont.(39-79-261-B)	15/10/42	M.N. Zinck	1067	leaves	11.6	0.19
				1066	stems	3.4	0.02
Solidago lepida DC. var. elongata (Nutt.) Fern.	Fort Sask., Alta.	8/7/42	G.H. Turner	312	whole	9.2	0.26
	Quill Lake, Sask.	29/7/42	B.J. Sallans, R.C. Russell	686	whole	7.9	0.14
	Armley, Sask.	20/8/42	R.C. Russell	865	whole	8.6	0.17

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
	Ottawa, Ont.(X-2-46)	12/8/43	M. Sutton	1658	leaves	17.0	1.30
	Ottawa, Ont.(X-2-42)	13/8/43	M. Sutton	1696	leaves	15.8	1.40
	Ottawa, Ont.(X-2-59)	13/8/43	M. Sutton	1684	leaves	16.8	1.30
	Ottawa, Ont.(X-6-767)	13/8/43	M. Sutton	1701	leaves	14.4	1.10
	Ottawa, Ont.(X-2-94)	14/8/43	M. Sutton	1718	leaves	15.5	1.30
	Ottawa, Ont.(X-2-58)	14/8/43	M. Sutton	1719	leaves	14.8	0.92
	Ottawa, Ont.(X-2-42)	16/10/42	M.N. Zinck	1156	leaves	13.3	1.04
				1157	stems, flowers	7.7	0.10
	Ottawa, Ont.(X-2-46)	16/10/42	M.N. Zinck	1166	leaves	12.6	1.54
				1167	stems, flowers	2.9	0.16
	Ottawa, Ont.(X-2-59)	16/10/42	M.N. Zinck	1145	leaves	8.9	1.27
				1146	stems, flowers	6.0	0.15
	Ottawa, Ont.(X-2-58)	16/10/42	M.N. Zinck	1240	leaves	9.5	1.20
				1241	stems, flowers	6.8	0.15
	Ottawa, Ont.(X-2-767)	16/10/42	M.N. Zinck	1141	leavee	8.5	0.34
				1142	stems, flowers	3.3	0.06
	Ottawa, Ont.(X-2-94)	16/10/42	M.N. Zinck	1205	leaves	9.6	0.95
				1206	stems, flowers	5.1	0.12
Solidago lepida DC. var. fallax Fern.	Dropmore, Man.	?/7/42	Skinner Nursery	465	whole	7.4	0.24
	Ottawa, Ont.(X-2-819)	7/8/43	M. Sutton	1620	leaves	17.9	1.10
	Ottawa, Ont.(X-2-31)	11/8/43	M. Sutton	1637	leaves	16.8	1.10
	Ottawa, Ont.(X-2-29)	11/8/43	M. Sutton	1643	leaves	15.5	0.97
	Ottawa, Ont.(X-2-82)	13/8/43	M. Sutton	1681	leaves	13.5	1.60
	Ottawa, Ont.(X-2-63)	13/8/43	M. Sutton	1687	leaves	16.8	1.50
	Ottawa, Ont.(X-2-84)	14/8/43	M. Sutton	1708	leaves	17.4	0.88
	Ottawa, Ont.(X-2-810)	14/8/43	M. Sutton	1712	leaves	19.1	1.20
	Ottawa, Ont.(X-2-89)	14/8/43	M. Sutton	1714	leaves	15.2	1.30
	Ottawa, Ont.(X-2-81)	14/8/43	M. Sutton	1720	leaves	16.4	0.93
	Ottawa, Ont.(X-2-88)	14/8/43	M. Sutton	1721	leaves	16.2	1.00
	Ottawa, Ont.(X-2-82)	16/10/42	M.N. Zinck	1121	leaves	7.5	0.58
				1122	stems, flowers	4.3	0.17
	Ottawa, Ont.(X-2-29)	16/10/42	M.N. Zinck	1092	leaves	11.2	0.85
				1091	stems, flowers	7.5	0.10
	Ottawa, Ont.(X-2-81)	16/10/42	M.N. Zinck	1135	leaves	8.9	1.17
				1136	stems, flowers	7.5	0.11
	Ottawa, Ont.(X-2-88)	16/10/42	M.N. Zinck	1221	leaves	6.0	0.91

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Solidago lepida DC. var. fallax Fern. - Continued				1222	stems, flowers	7.4	0.15
	Ottawa, Ont.(X-2-89)	16/10/42	M.N. Zinck	1234	leaves	9.6	0.53
				1235	stems, flowers	4.2	0.25
	Ottawa, Ont.(X-2-82)	16/10/42	M.N. Zinck	1232	leaves	8.4	1.99
				1233	stems, flowers	6.1	0.11
	Ottawa, Ont.(X-2-800)	16/10/42	M.N. Zinck	1227	leaves	6.2	0.46
				1228	stems, flowers	4.8	0.22
	Ottawa, Ont.(X-2-84)	16/10/42	M.N. Zinck	1242	leaves	7.9	1.41
				1243	stems, flowers	4.5	0.08
	Ottawa, Ont.(X-2-810)	16/10/42	M.N. Zinck	1244	leaves	6.6	1.18
				1245	stems, flowers	5.8	0.11
Solidago missouriensis Nutt.	Fort Sask., Alta.	9/7/42	G.H. Turner	308	whole	11.7	0.27
	Eastend, Sask.	?/8/42	H.S. Jones	648	whole	13.7	0.29
		?/8/42	H.S. Jones	715	whole	14.1	0.31
		?/9/42	H.S. Jones	1047	whole	12.1	0.23
	Morden, Man.	1/7/42	H.H. Marshall	752	whole	13.4	0.17
	Ottawa, Ont.(X-2-799)	13/8/43	M. Sutton	1686	leaves	16.9	0.53
	Ottawa, Ont.(X-2-768)	13/8/43	M. Sutton	1694	leaves	13.1	0.90
	Ottawa, Ont.(X-2-799)	16/10/42	M.N. Zinck	1203	leaves	10.3	0.43
	Ottawa, Ont.(X-2-768)	16/10/42	M.N. Zinck	1185	leaves	10.5	1.26
				1186	stems, flowers	7.2	0.16
Solidago mollis Bartl.	Saskatoon, Sask.	4/8/42	R.C. Russell	681	whole	10.3	0.30
		18/9/42	R.C. Russell	1323	whole	9.8	0.41
	Morden, Man.	1/7/42	H.H. Marshall	751	whole	7.1	0.24
Solidago nemoralis Ait.	Fort Sask., Alta.	20/7/42	G.H. Turner	375	whole	11.2	0.22
	Ottawa, Ont.	25/8/42	W.H. Minshall, H. Groh	675	whole	14.2	0.66
	Kent Co., Ont.	7/9/42	C.C. Bell	836	whole	12.1	0.32
	Crediton, Ont.	?/8/42	L.O. Gaiser	798	whole	7.5	0.32
	Kent Co., Ont.	8/10/42	C.C. Bell	1298	whole	8.3	0.35
	Bridgetown, N.S.	21/8/42	R.M. Lewis	699	whole	14.2	0.29
Solidago pruinosa Greene	Stewart Valley, Sask.	1/9/42	B.J. Sallans, R.J. Ledingham	879	whole	9.9	0.25
	Floral, Sask.	18/9/42	R.C. Russell	1320	whole	12.3	0.16
Solidago puberula Nutt.	Ottawa, Ont.(40-41-144-4)	16/10/42	M.N. Zinck	1088	leaves	6.2	0.36
	New Minas, N.S.	11/9/42	R.M. Lewis	1328	whole	5.8	0.15
Solidago racemosa Greene var. gillmani (Gray) Fern.	Ottawa, Ont.(40-36-126)	11/8/43	M. Sutton	1649	leaves	18.8	0.84
	Ottawa, Ont.(X-2-85)	16/10/42	M.N. Zinck	1223	whole	5.4	0.22

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Solidago riddellii Frank	Rondeau Park, Ont.	10/9/42	C.C. Bell	842	whole	10.8	0.32
	Ottawa, Ont.(40-36-127)	10/8/43	M. Sutton	1625	leaves	15.7	1.20
Solidago rigida L.	Port Sask., Alta.	20/8/42	G.H. Turner	373	whole	10.6	0.20
	Sclanders, Sask.	25/6/42	R.C. Russell	297	whole	9.1	0.13
	Saskatoon, Sask.	7/8/42	R.L. Russell, R.C. Russell	685	whole	12.4	0.34
	Eastend, Sask.	1/8/42	H.S. Jones	716	whole	11.0	0.33
	Morden, Man.	25/6/42	H.H. Marshall	743	whole	7.9	0.13
	Ottawa, Ont.(39-61-147)	11/8/43	M. Sutton	1648	leaves	17.4	0.84
	Ottawa, Ont.(X-2-32)	11/8/43	M. Sutton	1638	leaves	18.8	0.77
	Ottawa, Ont.(X-2-37)	12/8/43	M. Sutton	1659	leaves	17.7	0.91
	Ottawa, Ont.(X-2-807)	13/8/43	M. Sutton	1675	leaves	15.0	1.20
	Ottawa, Ont.(X-2-807)	15/10/42	M.N. Zinck	1226	whole	3.5	0.27
	Ottawa, Ont.(39-61-147)	15/10/42	M.N. Zinck	1090	leaves	7.9	0.53
				1089	stems, flowers	6.7	0.06
	Ottawa, Ont.(X-2-32)	15/10/42	M.N. Zinck	1153	whole	5.3	0.54
	Ottawa, Ont.(X-2-37)	15/10/42	M.N. Zinck	1184	leaves	5.4	0.47
Solidago rugosa Mill.	Ottawa, Ont.	3/6/42	H. Groh	4	whole	10.4	0.28
	Ottawa, Ont.	11/8/42	H. Groh	548	leaves	14.5	1.15
				549	stems, roots, flowers	7.0	0.11
	Kent Co., Ont.	27/9/42	C.C. Bell	1299	whole	7.3	0.39
	Cape Breton, N.S.	20/8/42	J.P. MacMillan	703	whole	8.2	0.46
		20/8/42	J.P. MacMillan	702	stems, flowers, leaves	7.5	0.42
	King's Co., N.S.	13/8/42	R.M. Lewis	690	whole	10.8	0.23
Solidago rugosa Mill. var. villosa (Pursh) Fern.	Kent Co., Ont.	1/9/42	C.C. Bell	840	whole	5.8	0.26
				841	leaves	8.5	0.90
Solidago sempervirens L.	Ottawa, Ont.(40-17-62)	11/8/43	M. Sutton	1640	leaves	16.4	0.60
	Ottawa, Ont.(40-17-62)	15/10/42	M.N. Zinck	1094	leaves	10.3	0.82
				1093	stems, flowers	7.7	0.14
	Lunenburg Co., N.S.	12/7/42	M.N. Zinck	366	whole	10.8	0.24
	Oak Island, N.S.	12/7/42	R.M. Lewis	627	whole	8.1	0.24
	Margaret's Bay, N.S.	6/8/42	M.S. Brown	807	whole	7.8	0.51
	Chester, N.S.	1/10/42	L.H. Zinck	1034	leaves, seed heads	14.6	0.51
				1033	stems	4.5	0.15
	New Minas, N.S.	27/7/42	R.M. Lewis	625	whole	9.1	0.17
		10/8/42	R.M. Lewis	688	whole	7.5	0.36

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Solidago sempervirens L. - Continued		24/8/42	R.M. Lewis	810	whole	6.3	0.22
		8/9/42	R.M. Lewis	1324	whole	7.3	0.24
		23/9/42	R.M. Lewis	1334	whole	7.8	0.24
		7/10/42	R.M. Lewis	1332	whole	9.8	0.28
		21/10/42	R.M. Lewis	1351	whole	9.0	0.34
		6/11/42	R.M. Lewis	1350	whole	7.4	0.23
Solidago shortii T. & G.	Ottawa, Ont.(39-16-66)	7/8/43	M. Sutton	1622	leaves	18.5	1.10
	Ottawa, Ont.(X-2-33)	11/8/43	M. Sutton	1644	leaves	20.4	0.79
Solidago tenuifolia Pursh	Ottawa, Ont.(39-100-224)	10/8/43	M. Sutton	1632	leaves	17.9	0.61
Solidago uniligulata (DC.) Porter	Yarmouth Co., N.S.	5/9/42	R.M. Lewis	1326	whole	13.9	0.21
Sonchus arvensis L.	Vancouver, B.C.	23/6/42	J. Davidson	188	whole	10.7	0.29
	Pemberton, B.C.	10/8/42	J. Ronayne	687	shoots	7.6	0.28
	Katepwa, Sask.	1/7/42	L.T. Carmichael	270	whole	8.7	0.32
	Saskatoon, Sask.	9/7/42	R.C. Russell	527	whole	8.0	0.35
	Fort Sask., Alta.	13/7/42	G.H. Turner	371	whole	7.6	0.30
	Morden, Man.	?/8/42	H.H. Marshall	759	whole	6.3	0.21
	Ottawa, Ont.	3/6/42	H. Groh	7	whole	8.1	0.61
		23/6/42	H. Groh	46	shoots	11.7	0.43
				47	roots	4.7	0.33
		20/7/42	H. Groh	318	whole	7.6	0.40
	Crediton, Ont.	5/7/42	L.O. Gaiser	437	whole	12.0	0.54
	Beamsville, Ont.	21/7/42	F. Ransom	593	whole	10.7	0.41
	Morpeth, Ont.	27/7/42	C.C. Bell	495	whole	9.9	0.35
	Blenheim, Ont.	8/8/42	H. Millar	608	shoots	9.1	0.41
	Fredericton, N.B.	21/7/42	S.F. Clarkson, J.L. Howatt	859	shoots	6.5	0.20
	Wolfville, N.S.	22/6/42	M.S. Brown	158	whole	9.6	0.39
	Kentville, N.S.	3/7/42	R.M. Lewis	244	shoots	9.3	0.39
	Lunenburg Co., N.S.	12/7/42	M.N. Zinck	369	whole	8.7	0.42
	Kentville, N.S.	16/7/42	R.M. Lewis	623	whole	9.5	0.36
	Halifax, N.S.	1/8/42	M.S. Brown	819	whole	8.2	0.36
Sonchus arvensis L. var. glabrescens (Guenther) Grab. & Wimm.	Brooke, Alta.	12/8/42	M.W. Cormack	720	whole	5.8	0.38
	Beamsville, Ont.	21/7/42	F. Ransom	580	whole	9.0	0.33
	Winnipeg, Man.	4/8/42	A. Simpson	569	whole	8.5	0.28
	Eastend, Sask.	1/8/42	H.S. Jones	640	whole	6.5	0.30
Sonchus asper (L.) Hill	Saskatoon, Sask.	24/7/42	R.C. Russell	537	shoots	11.9	0.27
	Morden, Man.	31/7/42	H.H. Marshall	755	whole	11.4	0.29
	Beamsville, Ont.	21/7/42	F. Ransom	590	shoots	9.5	0.23
	Kent Co., Ont.	3/10/42	C.C. Bell	1301	shoots	8.1	0.23
	Ottawa, Ont.	23/6/42	H. Groh	49	shoots	11.0	0.55
				50	roots	6.4	0.32

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
	Wolfville, N.S.	22/6/42	M. Brown	157	whole	10.9	0.36
	King's Co., N.S.	30/9/42	R.M. Lewis	1330	whole	7.7	0.17
Sonchus oleraceus L.	Lethbridge, Alta.	7/7/42	J.J. Sexsmith	383	whole	9.9	0.37
	Regina, Sask.	5/7/42	L.T. Carmichael	271	whole	11.6	0.17
	Morpeth, Ont.	27/7/42	C.C. Bell	493	whole	8.1	0.38
	Westboro, Ont.	10/8/42	H. Groh	540	whole	7.3	0.21
	Fredericton, N.B.	30/6/42	M.B. Moore, S.F. Clarkson	854	whole	6.5	0.12
		8/7/42	L.W. Howatt	856	whole	6.4	0.14
Stachys palustris L.	Farm Point, Que.	9/7/42	G. Anderson	203	shoots	12.9	0.27
				204	roots	6.5	0.15
Tanacetum vulgare L.	Ottawa, Ont.	5/8/42	H.A. Senn	485	leaves	12.6	1.07
				486	stems, flowers	6.0	0.13
Taraxacum laevigatum (Willd.) DC.	Fort Sask., Alta.	29/6/42	G.H. Turner	219	whole	9.9	0.32
Taraxacum palustre (Lyone) Lam. & DC. var. vulgare (Lam.) Fern.	Fort Sask., Alta.	29/6/42	G.H. Turner	220	shoots	14.9	0.37
				221	roots	7.6	0.50
	Saskatoon, Sask.	15/6/42	R.C. Russell	288	whole	13.2	0.38
	Regina, Sask.	3/7/42	L.T. Carmichael	273	whole	8.8	0.25
	Eastend, Sask.	1/7/42	H.S. Jones	280	whole	5.8	0.29
				281	leaves, flowers	10.8	0.37
				282	roots	7.1	0.31
		30/7/42	R.A. Wilkinson	556	whole	7.2	0.29
	Morden, Man.	26/6/42	H.H. Marshall	746	whole	4.5	0.21
	Beamsville, Ont.	7/7/42	F. Ransom	585	whole	10.1	0.28
	Kent Co., Ont.	8/8/42	C.C. Bell	629	whole	6.3	0.45
	Ottawa, Ont.	23/6/42	H. Groh	43	whole	8.8	0.42
				44	flowers	3.4	0.26
				45	roots	3.5	0.32
	Wolfville, N.S.	17/6/42	R.M. Lewis	77	whole	7.1	0.38
Tradescantia virginiana L.	Cookeville, Ont.	20/7/42	C.H. Radford	320	whole	18.8	0.31
Tragopogon dubius Scop.	Summerland, B.C.	15/6/42	G.E. Woolliams	135	whole	11.8	0.22
	Vancouver, B.C.	23/6/42	J. Davidson	180	whole	11.8	0.21
	Summerland, B.C.	30/6/42	G.E. Woolliams	238	whole	12.0	0.15
	Westbank, B.C.	4/7/42	G. Stevenson	510	whole	12.6	0.14
	Summerland, B.C.	13/7/42	G.E. Woolliams	468	whole	10.5	0.12
	Creston, B.C.	1/7/42	W.S. Cameron	539	whole	12.4	0.15
	Summerland, B.C.	3/8/42	G.E. Woolliams	599	whole	10.1	0.09
	Ft. Sask., Alta.	15/7/42	G.H. Turner	372	whole	10.6	0.20
	Calgary, Alta.	5/8/42	W.A. Hagborg	518	whole	10.7	0.17
	Saskatoon, Sask.	22/6/42	R.C. Russell	289	whole	18.0	0.17

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
Tragopogon dubius Scop. - Continued	Katepwa, Sask.	1/7/42	L.T. Carmichael	272	whole	11.8	0.18
	Eastend, Sask.	30/7/42	R.A. Wilkinson	559	whole	11.3	0.17
		1/7/42	H.S. Jones	285	whole	12.8	0.27
		1/8/42	H.S. Jones	638	whole	9.8	0.18
		1/8/42	H.S. Jones	644	whole	8.9	0.19
	Killarney, Man.	14/7/42	B. Peturson, W.A. Hagborg	305	whole	11.5	0.15
	Kent Co., Ont.	18/9/42	C.C. Bell	1302	shoots	8.6	0.22
	Ottawa, Ont.	24/8/42	M.N. Zinck	1799	leaves	20.0	0.42
		24/8/42	M.N. Zinck	1794	leaves	18.7	0.48
Tragopogon porrifolius L.	Vancouver, B.C.	23/6/42	J. Davidson	179	whole	9.4	0.21
	Beamsville, Ont.	7/7/42	F. Ransom	594	shoots	9.2	0.26
	Kitchener, Ont.	4/8/42	F.H. Montgomery	1056	whole	8.7	0.07
	Fort Frances, Ont.	1/8/42	A. Cramg	710	roots	8.7	0.31
	Preston, Ont.	2/9/42	H. Groh	773	whole	6.8	0.11
	Ottawa, Ont.	24/8/43	M.N. Zinck	1801	leaves	14.3	0.63
	Ottawa, Ont.	24/8/43	M.N. Zinck	1793	leaves	13.7	0.64
Tragopogon pratensis L.	Summerland, B.C.	17/8/42	G.E. Woolliams	726	whole	10.8	0.20
		31/8/42	G.E. Woolliams	830	whole	9.5	0.17
	Strathmore, Alta.	4/7/42	J.J. Sexsmith	385	whole	12.2	0.20
	Macleod, Alta.	1/7/42	R.H. Dixon	229	whole	10.4	0.19
	Brant Co., Ont.	1/6/42	A.M. Baer	140	shoots	6.4	0.21
	Brantford, Ont.	1/7/42	F. Luck	335	whole	7.2	0.27
	Kitchener, Ont.	4/8/42	F.H. Montgomery	1057	whole	6.8	0.13
	Ottawa, Ont.	6/6/42	H.A. Senn	10	shoots	9.8	0.23
				11	roots	12.0	0.30
		9/6/42	H. Groh	14	shoots	8.2	0.27
				17	roots	14.0	0.47
	Ottawa, Ont.	11/6/42	W.H. Minshall	25	shoots	8.9	0.22
				26	roots	13.3	0.40
	Ottawa, Ont.	6/8/42	W.H. Minshall	501	whole	7.5	0.22
		6/8/42	W.H. Minshall	502	whole	11.2	0.22
		24/8/43	M.N. Zinck	1792	leaves	15.9	0.39
		24/8/43	M.N. Zinck	1800	leaves	17.6	0.47
	Quebec, Que.	1/6/42	O. Caron	232	whole	9.4	0.21
	Torryburn, N.B.	6/7/42	J.L. Howatt, S.F. Clarkson	855	whole	6.6	0.08
	Wolfville, N.S.	16/6/42	M.S. Brown	70	shoots	10.4	0.19
	Kentville, N.S.	17/6/42	R.M. Lewis	80	shoots	11.1	0.24
Typha latifolia L.	Westboro, Ont.	2/7/42	M.N. Zinck	153	shoots	10.0	0.28
Urtica procera Muhl.	Ottawa, Ont.	15/8/42	H. Groh	571	whole	12.5	0.24
Verbascum nigrum L.	Ottawa, Ont.	29/6/42	D.C. McIntosh	94	shoots	13.7	0.20

Table 1. Resin and rubber content of plants determined by extraction with acetone for six hours and followed by extraction with benzene for three hours - Continued.

Scientific name	Locality	Date collected	Collector	Lab. No.	Part analyzed	Acetone extract, % dry wt.	Benzene extract, % dry wt.
				95	roots	10.0	0.13
Verbascum thapsus L.	Ottawa, Ont.	5/8/42	H.A. Senn	473	leaves	18.1	0.19
				474	stems, flowers	13.4	0.20
		13/8/42	H. Groh	554	whole	11.6	0.20
Vinca minor L.	Ottawa, Ont.	7/7/42	H.A. Senn, D.C. McIntosh	160	whole	19.6	0.71
	Digby Co., N.S.	16/9/42	R.M. Lewis	1333	whole	10.5	0.36

Table 2. Effect of long and short extraction periods on the amount of acetone and benzene extracts obtained from plant material

Plant	Lab. No.	Acetone extract, % dry wt.		Benzene extract, % dry wt.	
		6 hrs.	20 hrs.	3 hrs.	20 hrs.
Apocynum androsaemifolium L.	828	13.4	22.9	0.61	0.96
	822	18.9	23.2	1.18	1.35
	918	21.5	29.6	2.09	2.40
	909	33.3	33.8	0.94	0.84
	1483	32.3	33.2	1.61	1.95
	1488	30.3	32.4	1.67	1.85
Apocynum cannabinum L.	775	12.2	16.4	1.13	1.15
Apocynum cannabinum L. var. glaberrimum A.DC.	555	15.6	18.5	0.66	0.58
Apocynum sibiricum Jacq.	419	22.1	23.1	1.35	1.40
	513	20.4	23.5	1.31	1.40
Apocynum sibiricum Jacq. var. salignum (Greene) Fern.	509	12.6	15.1	0.71	0.76
Asclepias incarnata L.	903	21.1	25.3	1.10	1.03
	1502	16.9	20.7	1.82	1.25
	782	18.4	22.3	1.30	1.30
	659	18.4	21.5	0.57	0.53
	927	16.1	24.9	0.98	1.00
	928	8.9	14.3	0.08	0.11
	929	18.2	26.3	0.79	1.20
	963	16.6	27.6	0.76	0.91
	1004	16.9	25.4	0.69	0.87
	201	23.0	27.0	0.89	0.75
Asclepias incarnata L. var. pulchra (Ehrh.) Pers.	978	17.9	25.0	1.18	1.55
Asclepias speciosa Torr.	595	10.3	11.3	0.95	1.03

Table 2. Effect of long and short extraction periods on the amount of acetone and benzene extracts obtained from plant material - Continued

Plant	Lab. No.	Acetone extract, % dry wt.		Benzene extract, % dry wt.	
		6 hrs.	20 hrs.	3 hrs.	20 hrs.
	728	11.0	13.6	0.91	0.90
	816	10.0	18.3	0.87	0.93
Asclepias syriaca L.	1499	15.5	22.6	0.96	1.20
	1508	12.8	17.0	2.34	2.75
	902	16.1	20.5	1.30	1.35
	911	13.7	18.2	1.75	1.55
	915	14.5	17.5	2.10	1.95
	1478	14.4	21.5	2.20	2.40
	1490	11.7	17.6	1.90	2.20
	40	14.9	20.8	0.75	0.68
	566	15.4	17.6	1.81	2.05
	763	11.9	16.1	1.90	2.10
	961	12.5	21.8	1.06	1.25
	504	16.8	21.0	2.82	2.70
	506	15.0	17.8	1.48	1.55
Asclepias tuberosa L.	730	13.6	15.6	1.16	1.25
Campanula betonicaefolia Sibth. & Sm.	113	13.5	15.8	0.66	0.80
Campanula carpatica Jacq.	128	11.1	12.1	0.80	1.08
Campanula latifolia L.	58	23.8	27.8	0.58	0.57
	124	9.5	10.0	0.66	0.86
Campanula rapunculoides L.	121	9.8	10.7	0.75	0.80
Campanula trachelium L.	118	10.8	11.8	0.68	0.87
	120	12.0	13.4	0.76	0.96
Chrysothamnus nauseosus (Pall.) Britt. var. speciosus (Nutt.) Hall.	138	3.6	4.3	0.67	0.50

Table 2. Effect of long and short extraction periods on the amount of acetone and benzene extracts obtained from plant material - Continued

Plant	Lab. No.	Acetone extract, % dry wt.		Benzene extract, % dry wt.	
		6 hrs.	20 hrs.	3 hrs.	20 hrs.
	725	20.1	22.6	0.55	0.52
	833	3.5	4.8	0.54	0.52
Euonymus alata (Thunb.) Sieb.	1368	9.2	11.3	0.97	1.10
	345	13.9	15.5	1.19	1.30
Euonymus europaea L.	329	14.2	16.5	1.20	1.15
	349	12.9	14.7	1.27	1.25
	355	12.4	16.2	1.21	1.15
Euonymus maackii Rupr.	1357	11.9	13.3	0.82	1.50
	1358	9.1	11.2	0.87	1.20
	357	13.4	14.8	1.33	1.30
Euonymus radicans Sieb.	1382	4.8	6.1	1.01	1.20
Euonymus radicans Sieb. var. argentea	1377	13.1	15.1	1.09	1.50
Euonymus yedoensis Koehne	952	15.8	19.2	2.69	3.00
	951	9.2	10.8	0.76	0.96
Euonymus yedoensis Koehne var. koehneana Loes.	347	14.7	17.4	1.19	1.35
Lactuca biennis (Moench) Fern.	886	14.1	18.9	0.63	1.90
Lactuca pulchella (Pursh.) DC.	307	10.6	10.9	0.76	2.30
	274	12.5	12.2	0.69	2.85
	525	10.7	12.8	0.70	2.75
	757	10.1	11.6	0.60	2.05
Lactuca sativa L. var. crispa L.	636	12.6	16.9	0.64	2.45
Lonicera alpigena L.	439	25.2	26.9	0.86	0.77
Lonicera amoena Zab.	449	38.3	35.2	0.94	1.05
Lonicera ruprechtiana Req.	443	26.7	25.4	1.06	1.05

Table 2. Effect of long and short extraction periods on the amount of acetone and benzene extracts obtained from plant material - Continued

Plant	Lab. No.	Acetone extract, % dry wt.		Benzene extract, % dry wt.	
		6 hrs.	20 hrs.	3 hrs.	20 hrs.
	445	30.1	34.8	1.33	1.15
Lonicera tatarica L.	441	39.5	42.0	0.89	0.76
	453	25.8	29.0	1.18	1.05
Solidago altissima L.	891	14.6	19.7	1.18	1.30
Solidago canadensis L.	1172	9.4	12.3	1.99	1.85
Solidago gigantea Ait. var. leiophylla Fern.	1098	11.6	13.1	1.55	1.80
Solidago glaberrima Martens	1108	12.8	15.0	1.22	1.40
Solidago graminifolia (L.) Salisb. var. camporum (Greene) Fern.	1162	11.5	14.5	1.50	1.30
	1147	10.0	13.1	1.57	1.50
	1170	9.5	11.6	1.46	1.60
Solidago graminifolia (L.) Salisb. var. nuttallii (Greene) Fern.	1187	8.1	10.9	1.83	1.75
Solidago latifolia L.	835	9.3	11.2	0.92	0.95
Solidago lepida DC. var. elongata (Nutt.) Fern.	1166	12.6	15.6	1.54	1.60
Solidago rugosa Mill. var. villosa (Pursh.) Fern.	841	8.5	11.9	0.90	0.69